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**"The Man Who Changes
the Face of Detroit"**

also

**Tests of Austin-Healey,
Citroen ID-19, Peugeot**

AUGUST 1958 35c



4 WAGON TEST

**Comparing Ford,
Rambler, Oldsmobile
and De Soto**



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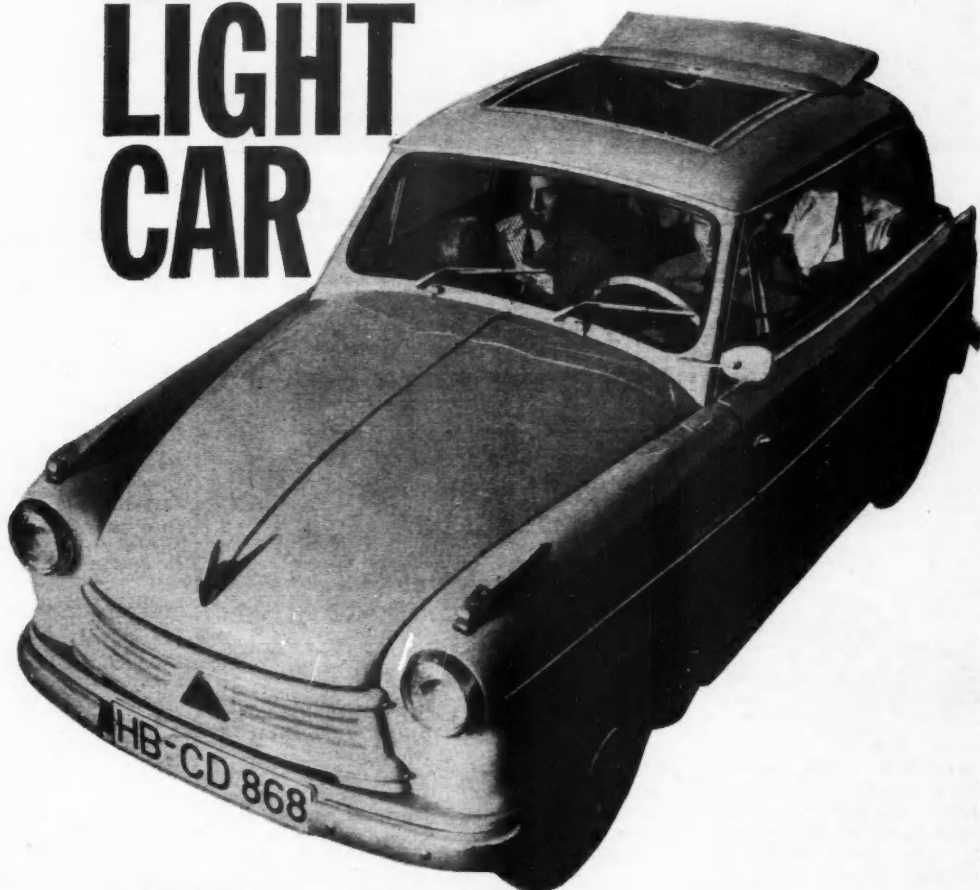


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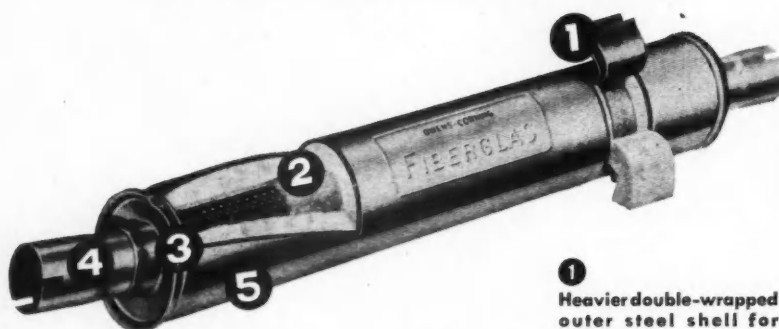
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AUGUST, 1958

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NEXT MONTH

The Look of the '59s

Detroit's Newest Engine

Imported Wagons Tests

MOTOR TREND



THE COVER:
Station wagons—the new love of the active American. MT testers take four wagons on a weekend caravan. Don Francisco, left, and Walt Woron are shown here comparing notes. Photo by Bob D'Olive.

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*With Paxton VR-58 Supercharger

VS-57 McCulloch Supercharger only	139.50
VR-58 Paxton Supercharger only	199.50

When ordering specify: year, make, and model of car; whether equipped with power steering or air conditioning; make of carburetor and whether two or four-barrel. Also note whether you want the supercharger and kit; supercharger only; or kit only. When kit only is ordered, add \$20.00 after deducting price of supercharger.

All prices F.O.B. Santa Monica, Calif. and subject to change without notice.

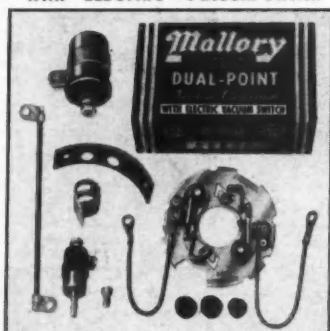
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MEMO FROM THE EDITOR

How to let Detroit hear you . . .

VIRTUALLY ON THE EVE of new car announcements (the first '59 is due out in mid-September) we think you will be interested in an anticipated series of articles we will soon be starting.

MOTOR TREND readers are quite a vociferous group; they don't hesitate to speak out loud and clear when they like something, or when they do not. We use this to a great extent in helping us to mold future issues.

At the same time we feel that we are somewhat remiss in our function as your spokesman to Detroit—or any manufacturer for that matter. We won't go into a discussion of "the power of the press" and all that, but your comments *in print* bear much more weight than if they are written or typed on a sheet of paper over your signature. With enough of these letters published in our pages and Detroit's attention drawn to them, we may be able to help mold the future U.S. car the way you've helped mold MOTOR TREND.

We'll be happy to hear from you on any subject, and will organize the letters into groups. Before we publish them we will ask Detroit stylists, engineers, and research men for their comments—as a rebuttal to your complaints or suggestions. This will serve two purposes: it will open their eyes to what knowledgeable people (about cars) want; it will show you their side of the two-headed coin.

We don't care what you write about; we want your studied opinion. Here are a few recent examples, culled from our stack of reader mail:

ON STYLING, Daniel R. Robinson of Miami, Fla. writes: "I believe the public does not want an austere car, but they do not want behemoths either. What many people who do much of their driving in and near cities, want is a compact car that is fancily trimmed, with easy entrance and exit . . ."

ON SAFETY, W.T. Basore of Oklahoma City, Okla. offers a new thought: "Owners are beginning to feel inadequate to cope with the advanced machines as drivers . . . Probably if drivers were as near-perfect as the machines, we would not now be faced with the safety problems now confronting us . . ."

ON DOMESTIC VS. IMPORTS, C.L. Gustavus of Manhattan Beach, Calif., writes: "It has been said in defense of the American automobile that it is best for the American road. I emphatically dissent. Any car that is constructed with the emphasis on styling, comfort, bigness and power at the expense of good braking, steering and general drivability cannot be best for any road . . ." Continuing with this debate, E.J. Garretson of Albuquerque, N.M. writes that in his many discussions with owners of late model cars he has come to the conclusion that ". . . Owners are no longer crazy about their domestic cars! Owners of imports are definitely enthused. American manufacturers are not making cars that hold up and that give trouble-free performance . . ."

ON "EASY RIDING," R.W. Martin of No. Miami, Fla. deplores the 14-inch tire: "Despite carrying four pounds above the recommended pressure and conservative driving, the 14-inch tires on our '57 Mercury were ready for replacement at 14,000 miles. A friend says we are lucky—his wore out at 9000. These tires were introduced with much ballyhoo about their being easier riding because of their low pressure. If it is necessary to carry extra pressure, doesn't that cancel out the easy riding feature . . .?"

ON INTERIOR DESIGN, Paul R. Buda of Calumet City, Ill. asks Detroit to put more insulation under the floor covering for better muffling of engine and road noises. He continues: ". . . A favorite trick of mine on the three Buicks I have owned was to remove the front floor covering and cut another insulating pad made from waffle padding used under rugs, and then replace the original floor covering. The results in minimizing sounds are astonishing!"

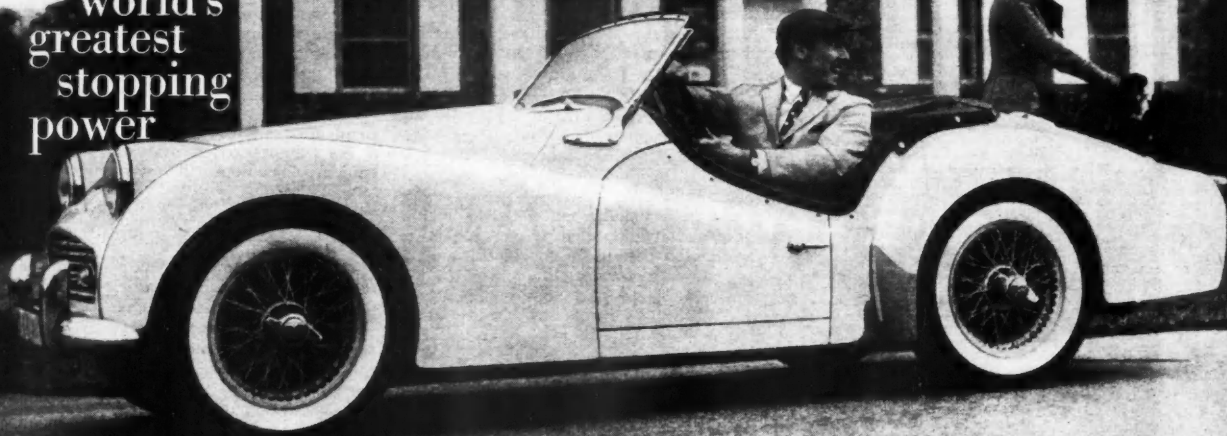
ON VISIBILITY, W.A. Schallis of Bloomfield, N.J. writes: "Greater visibility is of course a much desired feature inasmuch as it affords the driver a wider and safer view of the road. But when is good visibility more important—in fair or foul weather? . . . I believe the time has come when a car should be more functional in adverse weather . . ."

So there you have a sampling of what some of your fellow readers think about the cars of today. How do *you* feel? Do you like them the way they are? Do you think they need safer interiors? More performance? Increased comfort? Better economy? Improved roadability?

Whatever you think, let us know. We'll pass on the suggestions to Detroit through the pages of MOTOR TREND. Then we can hope that through our mutual effort we can make our combined voices "The Voice of the Motoring Public."

Paul R. Buda

world's
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power



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The world's greatest and only technical braking advance in our time—disc brakes—are standard equipment on the beautiful, new 1958 TR3 from Britain. And no matter how the big boys try to beat their "drums" with ad-lib, we have them stopped . . . cold.

That's because our disc brakes really dissipate heat, giving you at least four times more braking efficiency. Any brakes stop hard once or twice, but the intense heat created seriously cuts down future braking ability. This is called fading . . . something you'll never know in an exciting TR3 . . . even if you try ten panic-stops in a row. And you stop with such grace. Your wheels actually slow up in direct relation to your pedal pressure. You *roll* to a stop . . . without a waver . . . in any weather.

Naturally, the very need for this greater stopping power proves that this car can really go, as well. It is a classic example of TR3 engineering integrity . . . the world's finest performance value. So if you want to start a sensation, there's one stop you must make . . . come for a guest-drive today.

*2675 at U.S. ports of entry, plus state and/or city taxes (slightly higher West Coast.)

Wire wheels, hard top, rear seat, white wall tires and overdrive, etc. optional extra

SPECIFICATIONS:

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ENGINE: 4 cyl. (OHV) 1991 cc **OUTPUT:** 100 BHP

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POWER-GARD, a replacement dipstick for your car, was developed to counteract these twin threats, to give your engine longer life, greater economy, smoother performance and to enable you to demand more money at trade-in time.

HERE'S HOW IT WORKS
Your POWER-GARD dipstick is the only removable part of the engine in contact with both the noxious, deadly acid fumes AND the particle-laden moving stream of oil. Its "Noble Metal," magnesium is more readily attacked by the acids present in your engine than steel or other metals... thus it can SACRIFICE ITSELF to protect your engine. POWER-GARD's powerful, super-charged ALNICO-V magnet (used in missiles and rockets) is so strong it will suspend over 1/2 lb. of metallic particles from a broad area AND TAKES THEM OUT OF THE OIL FOREVER BECAUSE YOU WIPE IT CLEAN EACH TIME YOU CHECK THE OIL!

TRY POWER-GARD AT OUR RISK
Send only \$3.95 for a POWER-GARD replacement dipstick for your make and model (including imports). Try it for ten days, examine it, if you are not satisfied, if you don't see with your own eyes visual proof of POWER-GARD's amazing action, return it for a full refund. Actually, we know you will be delighted with your POWER-GARD and the money-saving protection it offers.

"AROUND THE BLOCK" TEST
Don't delay, put this newly developed unit to work for you. Here's a quick test: Install POWER-GARD (in two seconds) drive your car around the block, just enough to get the oil warm, check POWER-GARD and note the tiny metallic particles it has removed in just that short trip. Now, multiply that "around the block" by the thousands of miles you drive annually. You will say, "How can I afford to be without POWER-GARD protection?"

AUTOMATIC TRANSMISSIONS NEED POWER-GARD PROTECTION too. Ask any transmission specialist how much metal he can scoop out of the transmission on a repair job! It will amaze and frighten you. An Automatic Transmission POWER-GARD sells for just \$3.95, too... or for only \$3.00 when ordered as an engineered set with an engine POWER-GARD for the same car. Send just \$4.95 for both.

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I enclose \$3.95 ☐ \$4.95 ☐

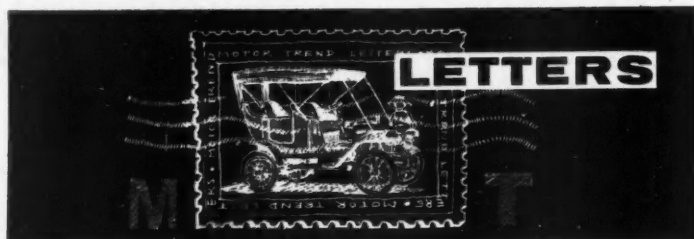
Send Engine POWER-GARD ☐ Transmission Type ☐

My car is a _____ Yr. _____ Mod. _____

NAME _____

ADDRESS _____

CITY _____ ZONE _____ STATE _____



SATISFIED WITH SIXES

Dear Sir:

"Are the 6's Good Economy Buys?" failed to consider or stress the following facts:

(1) Most driving by the ordinary person is under local or urban conditions, calling for speeds under 50 mph. (2) Almost nowhere in the U.S. have I seen LEGAL SPEEDS in excess of 60 mph.

Just what real value for the average person is there in a super-powered, 110-mph-plus, 0-to-50-mph-in-five-seconds type of auto?

I have a six-cylinder 1957 Plymouth Savoy which I have driven over 12,000 miles in the past eight months. I have never seen the occasion yet where I needed more performance than that provided by my six-cylinder engine. As a bonus I get excellent gas mileage on regular gas, enjoy low maintenance and tune-up charges, get good tire wear and the best in dependable operation.

Why should I feed gasoline to 300 or 400 horses when I can never legally use them?
C. H. Whitledge Fort Leavenworth, Kan.

Dear Sir:

I happen to have one of these high-powered gas-eatin' behemoth bombs of over 300 horsepower in my garage, along with a nifty little Ford Six — both with automatic transmissions. I find the Ford's performance is sparkling and quite adequate on city streets, freeways or open highways, and

it operates over 35 per cent cheaper than my Buick. The ride is excellent, and it handles very well.

Why more people don't get smart and buy good, economical transportation in these fine little Sixes I don't know. Maybe that is why foreign car sales are booming—people just don't realize they can really get what they are looking for in a SIX—with parts and service in every village and hamlet across the U.S. and Canada.

Rex E. Galloup

Houston, Tex.

Gentlemen:

The attitudes concerning power which Don Francisco champions will keep the horsepower race galloping.

Paul D. Walker

Rivera, Calif.

Gentlemen:

Don Francisco keeps talking about performance all through the article—I thought the article was about economy?

Sixes have less parts and are cheaper to repair; the accessibility of the engine lowers the labor cost. The simple one- or two-barrel carburetor doesn't require frequent tune-ups as a four-barrel V8.

If V8s are so good, why are 95 per cent of the race cars in the world Fours and Sixes?

Walt Daniels

Alamogordo, N.M.

'59 FORD?

Sir:

Here is a picture of what I think the '59 Ford will look like.

The car was seen on about the 23rd of February on Highway 66 going east out of Albuquerque. We spotted it and gave chase. About 15 miles on the Detroit side of Albuquerque they brought the little jewel in for a pit stop and coffee.

It looked a lot like the '58 Thunderbird,



except it was a four-door and all the chrome was covered and it had a dull black finish.

Walt Oettinger

Albuquerque, N.M.

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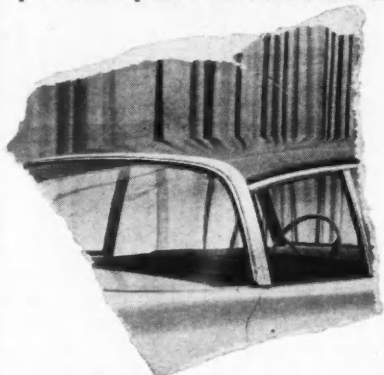
ZONE _____ STATE _____



NEW SMALL FORD?

Mr. Woron:

I thought you might be interested in this piece from a photo which I found near the



Ford Engineering Center, following strong winds.

My guess is that it is a small car proposal—not bad!

Just Curious

Dearborn, Mich.

STUTZ FANS UNITED

Gentlemen:

Since when in thunder did a 32-valve Stutz have 16 cylinders??? (June MT). Even with radio and aluminum body, it would cost \$7130, not \$9000.

J. Petrik

Belleville, Ill.

Dear Sir:

The only 16-cylinder Stutz I ever heard about was Frank Lockhart's Black Hawk. It had two 91-cubic-inch Miller blocks.

My last Stutz was a 1932 DV-32. LeBaron built the body and it cost \$7800 when a dollar was a dollar.

Ralph Butz

Lawndale, Calif.

Dear Sirs:

"DV-54"? Why, even the emblem on the front says DV-32. The 32 stands for 32 valves, but not 54 yet!

Rod Basting

Newport Beach, Calif.

Dear Sir:

I'm certain Mr. Miller will be surprised to learn that he has 16 cylinders under the hood of his beautiful Monte Carlo DV-32, for Stutz never made a production V-16 engine. The Stutz DV-32 is an eight-cylinder job, straight of course, with dual intake and exhaust valves (four per cylinder).

The DV-54 designation refers to the individual body model used by Stutz dealers when sending orders for this particular Weymann-built semi-custom model back to the factory.

William R. Gibson

New Centre, Mass.

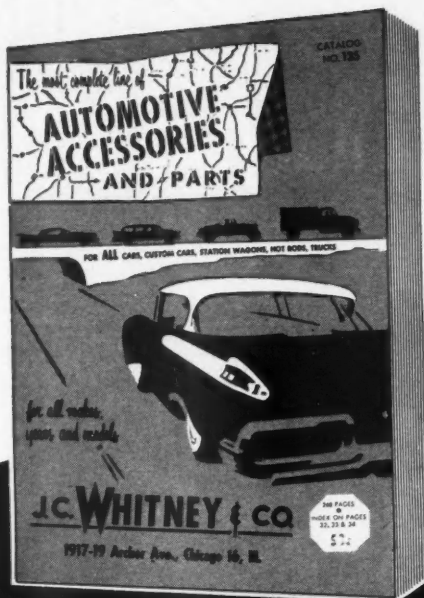
Dear Sir:

The "SV" was a single set of valves or 16 valves, and the "DV" was a double set or four valves to the cylinder. If it were a 16-cylinder it would be designated DV-64—not DV-54.

J.H.H.

South San Francisco, Calif.

Our caption writer has been banished to the Land of Pincus. Sure, we know 32 stands for valves, with four per cylinder. As to the price, the aluminum-paneled Monte Carlo was much higher priced than the fabric-covered car. With wire wheels, luggage rack and high-speed tires, the car would have run well over \$9000. Our most sincere apologies to all Stutz owners and fanciers.—Ed.



J. C. WHITNEY'S

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"Edsel is likely to be less lonesome design-wise in the not too distant future as some other makes will incorporate versions of the vertical radiator design." TRUE—Some designers not in the Ford family agree that the vertical radiator of yesteryear has a chance to make a real comeback.

"Studebaker-Packard will drop the Packard models in 1959 and concentrate on the smaller car announced as in the works some time ago."

PROBABLY TRUE—Strong rumors to this effect are heard in Detroit but cannot be confirmed at this time. Packard models sold fewer than 800 units in the first quarter of this year, which lends credence to the reports.

"One of the 'Big Three' is investigating the possibility of applying highly efficient British designed two-trailing-shoe brakes manufactured in the U.S. to its regular passenger car lines."

TRUE—We are not at liberty to name the companies but prototype models are now undergoing tests. The brakes are made by an Ohio firm and have proved highly efficient in truck service.

"Lincoln will abandon unitized construction and go back to frame and body design." FALSE.

"Some of the 1959 cars will offer a new body finish that is much more lustrous than those of the past and will also be available in some completely new shades."

TRUE—This finish will be provided on all its lines by one of the Big Three corporations. More details must be held until model announcements.

"In a rather sweeping change of pace, one company in 1959 will completely rename its individual models dropping some designations that have been used for a long time to discriminate between series."

TRUE—This is due to a change in the basic body choices in some lines but will not affect body styling. Some names that are likely to appear are LeSabre, Invictus, Electra, and Catalina.

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MOTOR TREND/AUGUST 1958 11

SPOTLIGHT

ON

DETROIT

by Bill Callahan Detroit Editor

EVERY TIME YOU TURN OVER A STONE, out creeps a nestful of rumors that one, or all, of the Big Three manufacturers will shortly produce a small car to meet "the growing demand for smaller, plainer, more economical transportation."

FROM WHERE I SIT, I'd say don't hold your breath till that happens—it may be next year, it may not. If, as, and when, any of the divisions of General Motors, Chrysler, or Ford does come up with a small American production car it will be in response to a clear-cut mandate from car buyers, and may spring full-blown, like Athena from the head of Zeus. It would be beamed to provide all the features Americans find desirable in smaller cars but would retain American standards of comfort and roominess. Currently makers feel there is no such clear mandate.

THE SO-CALLED INDEPENDENTS—American Motors and Studebaker-Packard—unquestionably are smart in launching their compact car concepts rather than breaking their picks by entering a head-on competitive collision with divisions of the three big corporations that can outproduce and outsell them and still return a higher per-unit profit. These so-called "independents" are finding, and will unquestionably continue to find, a solid and lucrative market among buyers for whom their products are especially tailored.

INDEPENDENTS HAVE TWO DIRECTIONS in which to go. They can construct highly expensive, ultra-luxurious cars in the custom class that can be priced high enough to assure a profit on low production. This end of the field is pretty well blanketed by Cadillac, Lincoln, Continental, Imperial, etc. The second move is into the field which Rambler and S-P have chosen and which gives good promise, if producers don't over-estimate its potential.

THIS "IF" IS THE WEAKNESS in the conclusion reached by so many self-styled authoritative students of the industry. Personally, I favor the small, compact car, but if I were part of the planning group in the Big Three I would accept the opinions of these "students" as to

the potential of the small car market only with major administrations of salt.

THE HYPOTHESIS THAT AMERICANS are clamoring for smaller, plainer, more economical cars is based upon the rapid growth in registration of small foreign cars in the past few years and the success Rambler is currently enjoying (only make selling more than last year). But even with Rambler, 80 per cent of its sales are the 108-inch-wheel-base models, a few Ambassador 116-inch jobs and 20 to 22 per cent are 100-inch Americans. Last year imported car sales totaled 207,000 units (which is still only 3.5 per cent of total sales.) However, import sales in 1958 could rise to a more significant six or seven per cent.

IF A GM DIVISION were to market a small car, it would probably be Chevrolet. Ed Cole, Chevrolet General Manager, would be the man to give the go-ahead. In 1957, Chevrolet sold 1,456,288 units to capture 24.34 per cent of the market and wind up in second place to Ford, which registered 1,493,617 units to capture 24.97 per cent of the market. Chevrolet 1958 models, despite the fact that they are nine inches longer than the 1957 line, have increased their penetration of the market by around four per cent so they are now getting close to 28 per cent of available sales. Obviously, the size, and so-called gilded-lily trim of the 1958 Chevrolet has not been hurting its prestige in the 1958 market, with the Impala in best demand.

SO THE QUESTION IS: would the addition of a small car to its 1959 line increase Chevrolet's market penetration and in what direction? If the addition of a small car would insure that Chevrolet would capture the entire small car market—including that segment now being taken by American Motors and imported cars—the addition might be justified, but that would be a grossly silly assumption.

THERE IS A CULT of foreign car owners who, right or wrong, sincerely prefer imported cars but are uncommonly fickle as to which makes they buy. Many of those who now own foreign cars are probably out of the market, lacking any incentive to buy another copy of

their present car. Rambler enjoys a strong owner loyalty and does have some lead on any other American small car that would be offered because of American Motors' pioneering in this field. If all the Ford and Chrysler product owners who are now supposedly longing for a smaller car would shift to Chevrolet, are there not also a similar number of Chevrolet owners who would shift down to the Chevrolet small car? The sum total of such a venture could be that Chevy might wind up with no greater market penetration, but with two cars competing against each other.

IT IS GENERALLY AGREED in the industry that the addition of a small car would not mean the elimination of yearly model changes if our present plants are to be kept busy and present work forces employed. This being the case it would mean retooling each year for two lines of cars rather than one. Suppose in the case of the hypothetical Chevrolet, Chevy would sell 500,000 small cars and one million big cars—the extra tooling cost amortized over the smaller production of each line would increase—not reduce—prices.

PRODUCTION STUDIES and experiments have shown that the cost of producing a small car is not materially lower than the cost of a so-called big car. In other words, a 20 per cent reduction in size will not result in a 20 per cent cut in the production cost since it means no reduction in the number of parts involved, no cut in machining operations or relaxation of manufacturing tolerances. Assembly cost would probably increase rather than diminish. The reduction in the amount of material used cost-wise is inconsequential.

WITH ALL THESE FACTORS to consider, the Ed Coles in every car-producing division in the industry have much to ponder before they give the go-ahead for their plants. I don't presume to think for any of these men whose job it is to design and build the car that will sell in the greatest quantity and provide satisfactory transportation for the greatest number of buyers, but in view of these problems I would say don't hold your breath till the small car comes.

SURVEYS ARE HELPFUL in determining

▶ Rumormongers keep whispering of Detroit's small-car plans to regain the market lost to imports. Such plans may very well be in the offing, but here's why Detroit is thinking twice before jumping into the fray.

trends but they can lead down fancy pathways. Up to now small car sales in the United States, including American Motors, account for six or seven per cent of the total market; possibly nine to 10 per cent this year in a curtailed market. Not all of the foreign cars are small transportation sedans, a high percentage are sports cars used for fun or to be fashionable. Others are high-priced big cars. To say that because even this 10 per cent have bought, or are buying, small cars indicates that all future American buyers will demand small cars is like saying that a culprit was guilty because one of the 12 jurors believed him so.

SURVEY ANSWERS OFTEN REFLECT what the answerer would like to have people believe he thinks rather than what he actually thinks. Most Americans would like to be thought of as sound, unostentatious, down-to-earth common men. Therefore, when they are asked what kind of car they prefer their answers are likely to describe the type of car a sound, unostentatious, down-to-earth common man would want rather than the car they would actually buy. Chrysler Corp. recently brought this into focus in a survey in which the respond-

IN THE FALL OF 1956 we made a survey of practically all of the American outlets for Mercedes for the Daimler-Benz North America Corp. One of the chief complaints we got from these dealers was their inability to get quick delivery on two chrome strips that had been made available to tack on the sides of the chromeless 190-SL. These two strips retailed for \$40, but the anti-chrome cult was clamoring to get them.

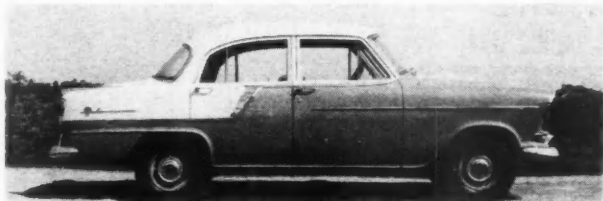
TO SUM THIS UP I would say that the case of the small car demand has not been proved to a point that would warrant entry into this field by so-called mass producers. True, this trend is being given careful study even to the point of obtaining outside bids on production costs, etc., which has led some to believe the small car is in the oven. The minimum "leadtime"—the time required to develop, test and arrange production facilities for any new model—is at least two years, so this preliminary investigation of costs and requirements would put the small car considerably in the future. Meanwhile, however, the industry is testing this trend further through the sale of products built by foreign affiliates. Ford offers cars from British Ford and has now added the

Even LaSalle, which was a small Cadillac, went by the boards in 1939. These cars did not disappear because of lack of design, poor engineering or inferior quality; they did lack demand.

WE SHOULD ALL AGREE that in America we cannot design cars by decree nor price them in line with Congressional whim. After all, regardless of its size, an automobile company can stay in business only if its products are accepted in sufficient volume to enable it to make a profit. This volume depends upon the appeal of its products to buyers. We can rest assured that no company is big enough to cram its products down the throats of the American public, regardless of product size or design.

LIGHTWEIGHT ALUMINUM ENGINES

weighing about 30 per cent (150 pounds) less than present cast iron types, which were announced by General Motors as having been successfully tested after six years of experimentation, may point the way to the engineer's dream of unitized powerplant and transmission units mounted either in the front or rear of the car of the



SMALLER, NOT SMALL CAR may be Detroit's answer to the diminutive foreign car invasion. Representative of such a car—maintaining American standards of roomy comfort—is GM's latest version of their Australian-produced, six-cyl. 70-bhp Holden, shown in sedan and wagon models.



ents were asked what type of car their neighbor would want. The answers pretty much described the present average American production car.

EVEN AMONG FOREIGN CAR BUYERS the protestations against "inordinate" decoration do not stand up in the light of actual choice when a purchase is made. A case in point is the Mercedes 190-SL. This car was originally imported with a minimum of trim. It was designed to appeal to the anti-chrome cult and was outstanding in appearance.

German Taunus. GM, through Pontiac, is offering its British Vauxhall, and, through Buick, its German Opel.

POSSIBLY SOME SHRINKAGE in car size could be effected in 1960 lines if majors are already convinced that such cars would sell better—and this does not rule out the possibility of a small Chevrolet. But past history of small cars here has been rather grim. There was the American Austin in the late '20s, the small Willys of the '30s, the Henry J, and postwar Willys Aero.

future. This would help stylists who are seeking lower car silhouettes but are presently limited by the driveline tunnel, unavoidable in current designs.

ENGINES IN THE REAR have been under consideration for some time, but the current heavy engines plus transmission units, when so placed, result in poor weight distribution, which in turn affords very unstable handling characteristics. The lighter engines now under development by GM may make such designs more practicable. /MT

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● **OFTEN IMITATED, NEVER EQUALLED.** More than a dozen manufacturers make some sort of device for controlling or filtering fuel. U. S. Patent No. 2544289 covers Mileage Minder's exclusive principle of positive fuel pressure stabilization and purification, making it the unchallenged leader. Mileage Minder has no balls, checks, valves or complicated adjustments. Can never cause fuel starvation, loss of safe passing power or damage to valves as a result of pressure reduction.

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● **COST CONSCIOUS FLEETS TURN TO MILEAGE MINDER.** Taxicabs, industrial and truck fleets are installing Mileage Minder in every unit, for economy, safety and dependability. Saves fuel, avoids breakdown, Master mechanics and engineers are constantly finding new applications for Mileage Minder—in marine, stationary and diesel applications.

● **NATIONWIDE DISTRIBUTION.** Today most leading automotive outlets feature Mileage Minder. Your garage or service station man will be glad to explain the problems which Mileage Minder solves completely. Your car dealer knows Mileage Minder will make his economy minded customers happier. Automotive accessory stores like to sell Mileage Minder because it's absolutely guaranteed, on a money back basis. No matter where you go for your Mileage Minder, insist on the genuine product. If your dealer is temporarily out of stock, ask him to get Mileage Minder for you. Accept no second best (and possibly injurious) substitute. Only genuine Mileage Minder gives full benefits at all speeds and loads.

● **COMPACT, HANDSOME, STURDY.** Mileage Minder stands out like a jewel in your motor. The cover is brilliantly chrome plated, and the metal body is lustrous di-chromate finish. Mileage Minder is break-proof, heatproof and shatterproof.

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● Are you, like 30,000,000 other car owners, needlessly wasting up to 3 gallons of gasoline in every ten purchased?

● Are you, like so many others, troubled with rough idling, dying, poor gas mileage, hard starting, flooding and gas odors in the car?

● Are you tired of getting only part of the power, acceleration and smoothness you paid for, and have a right to expect?

● If you are, you'll welcome the improved power, performance and gasoline economy you'll get with Mileage Minder!



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All over the country, master mechanics are recommending Mileage Minder for fuel system problems. Alert car dealers are installing Mileage Minder on each new car delivered in place of ordinary filters, saving free service headaches and customer dissatisfaction. Tune-up and carburetor shops are installing Mileage Minder to insure the success of each job. Service stations know the gas savings Mileage Minder brings. Nationwide parts and accessory stores are recommending Mileage Minder, particularly with each new fuel pump or carburetor sold. Remember . . . there is only one Mileage Minder, fully covered by U. S. Patent 2544289. Insist on Mileage Minder. Accept no substitute!

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Almost a million happy owners now know that Mileage Minder unconditionally guarantees more power, better performance and greater gasoline mileage.

Here's why Mileage Minder has leaped to unequalled popularity...

Fuel pressures in modern cars have doubled, tripled and quadrupled. A few years ago, most cars needed only two pounds per square inch fuel pressure, but now as much as eight pounds pressure is common. With higher pressures, the cam action of the fuel pump causes gasoline to surge to the carburetor in hammering pulsations, forcing fuel past the delicate carburetor needle and seat, and causing flooding, gas waste, rough idling and hard starting.

Furthermore, modern engines demand absolutely clean and pure gasoline—without foreign impurities to clog the close tolerances in modern carburetors.

MILEAGE MINDER GIVES YOU THE COMPLETE, GUARANTEED ANSWER

The amazing and wonderful new Mileage Minder is a fuel pressure stabilizer and purifier. It does three things to combat and conquer the problems that are giving millions of motorists so much trouble.

First, Mileage Minder stops hammering fuel pump pulsations, smooths the flow of gasoline from fuel pump to carburetor. This is accomplished by Mileage Minder's exclusive, patented diaphragm action, which stores the thrust of gasoline from the fuel pump, and tames it to a steady stream. Most important, Mileage Minder does not reduce fuel pressure to starve your engine and cause loss of power and performance, or damage to valves.

Second, Mileage Minder has a built-in, sintered bronze fine-pore fuel filter, completely purifying all gasoline passing through it.

Third, each Mileage Minder comes equipped with the new magnetic Trouble Trap, which gives absolute and positive assurance that no tiny fragment of metal will pass through the fuel line to clog your carburetor.

PRESSURES STABILIZED, IMPURITIES TRAPPED, PROBLEMS LICKED

With the purest of fuel flowing smoothly and freely to the carburetor, you'll notice the difference in your engine immediately, just as thousands of others have tried Mileage Minder and are completely satisfied.



The results are noticeable immediately when Mileage Minder is installed. Here are the things Mileage Minder is guaranteed to do for your car:

1. Save 10% to 30% gasoline.
2. Stop flooding, hard starting.
3. Give tiptoe power, flashing acceleration.
4. Smooth idling. No stop sign dying.
5. Make starting quicker, easier, smoother.
6. Cuts out gasping, stuttering, bucking.
7. Ends annoying gas odors in car.
8. Helps prevent fuel line vapor lock.
9. Causes no harmful restriction of manufacturers' recommended fuel pressures.

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Right now, you, too, can experience the benefits and performance your car should give you. Mileage Minder is yours to try on your own car, on a money back basis of complete satisfaction in every respect. This guarantee applies wherever you buy.

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New Mileage Minder has a compact metal bowl, break-proof and heatproof, finished in brilliant chrome and dichromatic metallic luster glow. Remember, Mileage Minder pays for itself in gas savings and improved performance... or your money refunded.

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and purifier

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TROUBLE TRAP

- THIS IS MILEAGE MINDER'S CONFIDENT AND FEARLESS GUARANTEE. With a good product, such as Mileage Minder, we have no doubt about the conditions of guarantee. We stand four-square behind every Mileage Minder, without hocus-pocus or double-talk. Satisfaction or your money refunded... this is our proud guarantee! It applies regardless of where you buy your Mileage Minder.

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What They Need

by John Booth Engineering Editor

ENGINEERING-WISE, AMERICAN CARS are better than they have ever been. Engine efficiency has exceeded even the most enthusiastic dreams of just a few years ago. Suspensions, at long last, are being engineered for today's power, and while far from perfected, show great promise of further improvement in the next few years. Brakes have been neglected; even so, their efficiency is gradually improving, too. Transmissions and differentials now perform with acceptable regularity. What then is wrong with Detroit's engineering?

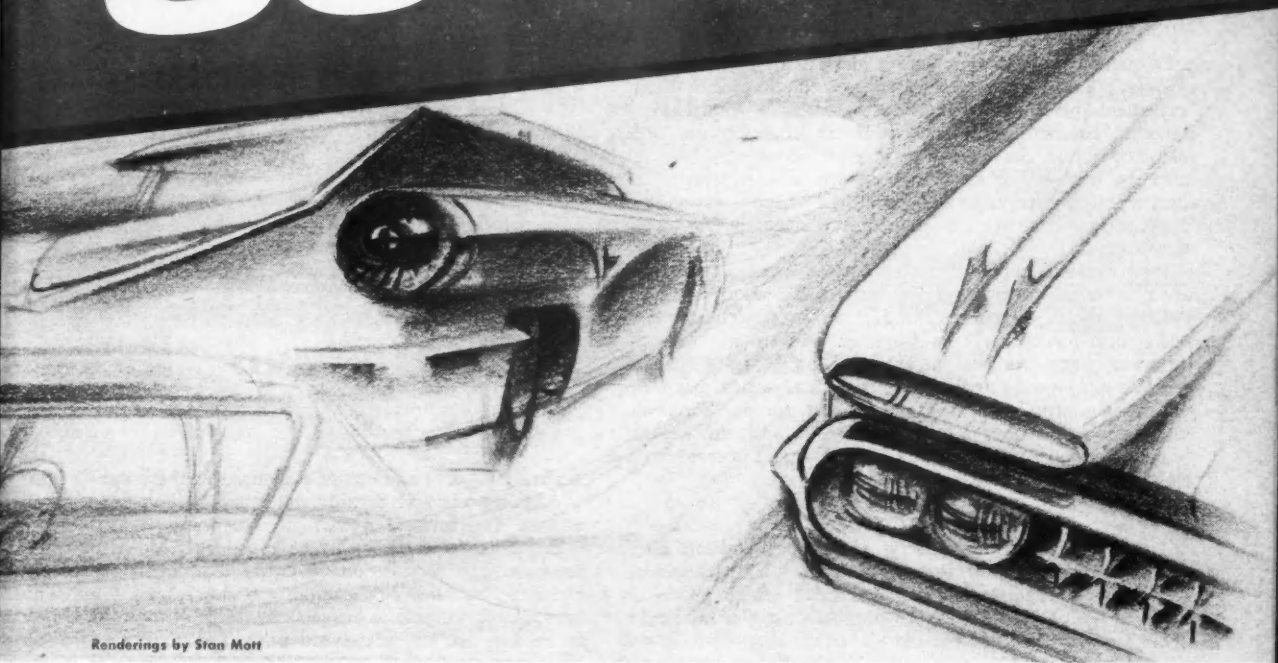
First, let's take a look at fuel systems. Carburetors have probably done as much to create the desire to "take a bus" as any other item on an automobile. They are called upon to perform herculean tasks to wring the last ounce of power from the engine, accommodate the automatic choke, automatic transmission and a host of other "musts." They need constant adjustment and are *still* affected with vapor lock and centrifugal flooding. This is in spite of consistent owner complaints for several years. Detroit needs better carburetors.

Conventional fuel injection isn't the answer either. The service problems connected with this item present even more headaches than today's carburetors. The complicated construction precludes its being offered except as an "extra cost" accessory. There is too much of that already.

continued on page 18



'59 CARS



Renderings by Stan Mott

What They'll Have

by Bill Callahan Detroit Editor

MODEL CHANGES IN 1959 will be the most extensive on an industry-wide basis that have been made in the past four years. General Motors' lines throughout will be completely restyled and members of the Ford family of cars will have completely new appearances. This will be true of the Ford and Mercury lines with less extensive changes in Lincoln and Edsel. Thunderbird, announced in February, will continue its present lines until later. Chrysler Corp. offerings (Chrysler, Dodge, Plymouth, DeSoto and Imperial) will stay basically with the so-called "Forward Look." All will have new front-end treatment and fins in the rear will be further accentuated. Studebaker-Packard will offer a new smaller car and American Motors will stand on its present designs with minor changes. Whether these improvements will be sufficient to reverse the present sales doldrums remains to be seen. But industry leaders are betting billions on the hope that they will—and they had to place their bets over a year ago.

Big change will be the general adoption of the overhead wrap-over windshield, which in the case of General Motors cars, will be applied in some cases both front and rear. Some designs in the GM lines will dispense with the rear corner post altogether, giving the rear window a real sun parlor effect.

Serpentine silhouette styling will be continued with stylists aiming for lower roof lines and an accentu-

continued on page 20

WHAT DETROIT'S CARS NEED

continued from page 16

Pre-vaporization of gasoline through a mechanical vaporizer would go a long way toward simplified carburetion. It is being done on an independent experimental level now, though further research may find it applicable only to gas turbines.

POWER EQUIPMENT

Frequent engine tune-ups are a must if the full potential of today's automobile is to be enjoyed. Detroit, with their "expedient" placement of power accessories and other "after-thought" paraphernalia, have made an engine tune-up a major operation. Service centers find it increasingly hard to keep the cost within reason due to the time consumed in disassembling accessories to get at the many components involved in a tune-up. Detroit definitely needs better accessory planning.

How can this be done? By the rather simple method of utilizing unused body compartments. The area behind the grille is a natural for installing a compact, well-designed power unit for hydraulic pressure, air pressure and air conditioning pump. Run off an extension of the crankshaft, it would supply power for practically all accessories that now require a multitude of small motors and pumps. Windows, seats, air suspension, air conditioner, windshield wipers, brakes, steering and many other niceties would operate from this one central source.

ENGINE ACCESSORIES

Other items such as battery, air cleaner and oil filter need Detroit's attention, too. Air cleaners should be smaller and incorporate a replacement cartridge which could be replaced with each oil change at nominal cost. The air intake should utilize the cool outside air rather than that in the blistering engine compartment. Efficiency would go up materially.

Today's batteries could be placed in a front fender recess and further reduce the clutter under the hood. An alternator, in place of the conventional generator, would give the electric system a much needed boost for accessory operation.

Oil filters should filter acids as well as dirt and incorporate either an air or water oil cooler. Complete replacement should be possible with one easy-to-reach bolt.

TRANSMISSIONS AND DIFFERENTIALS

Transmissions and differentials are, for the most part, rather dependable. They could, however, be mounted in one basic casting and bolted securely to the frame. Through the use of flexible rear axle systems such as a de Dion or swing axle design, the reduction of unsprung weight would greatly improve the inherent stability and riding qualities of today's car. It would also remove the transmission hump that annoys front seat passengers.

TIRES

Probably the most abused component of today's cars are the tires. Tremendous strides have been made in increasing their durability but they are *still* not good enough. True, the tire manufacturers know how to make them stand up

"Construction needs



"Tires need beefing up"



under fantastic conditions as evidenced in the grueling races at Indianapolis and Sebring, but they haven't found their way on America's cars yet.

A tabulation of tires that have suddenly blown out with less than 15,000 miles on them would probably cause even the most hard-headed "leadfoot" to slow down a bit. This is especially true of the heavier cars. Most of the trouble here is friction due to excessive flexing. This makes for a soft ride but unfortunately, a *last* ride in too many cases.

Tires need beefing up. If they are supposed to flex such an excessive amount, is it unreasonable to expect them to be designed to withstand it? We think not. Puncture-proofing and an emergency inner liner in case of a blow-out would reduce many accidents. Such tires are available now at a premium but why not as standard equipment?

SUSPENSIONS

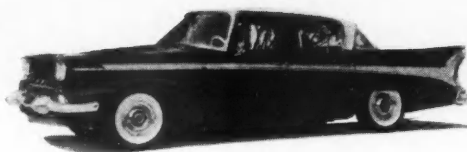
Long overdue for improvements, suspensions are finally beginning to receive the attention they deserve by Detroit engineers. Air suspension, now offered for most cars as an "extra," will eventually become standard equipment. By then, the "bugs" should be ironed out. But what about the man who wants this better ride now?

It's not that the new air suspensions are impractical—far from it. They can be perfected to a high degree of efficiency, but Detroit needs to do more testing of their new products before offering them to the public.

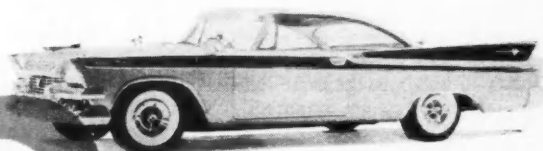
BRAKES

Detroit *still* needs to build a better brake. The increasing demands put on a set of brakes can't help but discourage even the most enthusiastic engineer. Really good brakes have been developed, but as yet they just can't be mass-produced within the price range necessary for production acceptance.

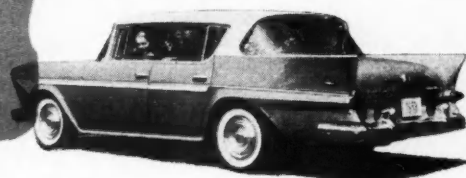
ds to be improved"



"Brakes require immediate attention"



"More efficient fuel systems"



"Suspensions long overdue for improvement"

The ability to stop a car under *all* conditions, which would be quite an improvement over present offerings, is not enough. Brakes should be powered, self-adjusting and incorporate an "anti-wheel-lock" device. This would prevent traction-robbing skids and assure peak braking efficiency in panic stops. An anti-wheel-lock unit has been developed, but not on a mass-produced basis. We think it should receive Detroit's immediate attention.

BODIES

Bodies, both in construction and styling, seem destined to remain in a closed circuit rat race for some time to come. Very little improvement has been made in the construction department for several years. New techniques (integral frame and body) have been developed, but the tremendous cost of retooling involved in producing this admittedly superior design has caused Detroit to tiptoe over the subject like a cat on a fresh cement walk.

Wrap-around windshields are now old stuff and the driving public seems to have adjusted their perspective to accommodate the built-in distortion—but why?

Evasive squeaks, subtle clicks and eerie thumps accompany today's driver as he wearily threads his way among traffic. Other seemingly insignificant annoyances also add up to a big headache of dissatisfaction when you have to live with them all year. Body leaks often cause a rainstorm to be greeted as some sort of collusion between car manufacturers and clothes pressing establishments. Sound deadening mats (a misnomer) fall off, screws back out and dome lights indiscriminately flick on and off (especially at night) like a \$2 seance.

Doors, body trim and hoods are often misaligned, scratched or even dented when you take delivery. This sloppy workmanship becomes more and more apparent as the original

enthusiasm of owning a brand-new car wears off. Detroit *still* needs to pay more attention to body details.

INTERIORS

Interior design, while quite good, needs further improvement. Speedometers which warn of excessive speed and are now available on some cars, are certainly a step in the right direction. Instruments aren't legible enough, however. In the interest of achieving a modern motif, Detroit often designs them with only three vague dots to indicate a whole series of operating levels. After all, an automobile is still a piece of operating machinery and good instrumentation should be a "must."

From the standpoint of basic interior engineering, there is still much improvement to be made. More legroom is needed in the rear. Tilt-back seats (bless American Motors) could be a more widespread boon to the weary traveler. Door locks have been materially improved from the safety standpoint, but should be made of more wear-resistant metal. And why not more convenient placement of ashtrays and glove compartments?

Transmission controls, brake pedals and various other operating paraphernalia are consistently being improved but often fall into the category of esthetic, rather than practical design. A standardized shift pattern is *still* one of the most sensible innovations Detroit could adopt, especially in these days of two-car families.

And there we have today's picture, one in which Detroit is faced with the necessity of re-evaluating its product from the wheels up. New and economical designs, new fabrication methods, attention to quality and a stabilized labor cost scale are absolutely necessary if the American automobile is to maintain its regal position on the "most wanted" list of today's buyer.

/MT

What You're Getting In '59

continued from page 17

ated appearance of length. Chevrolet will be about an inch lower than last year and will be longer in appearance and not much smaller than some other GM cars. The rear end treatment dispenses with the rolled type fenders with the new ones forming a shallow V. Ford will have new body treatment but will be about the same dimensionally as the present car. Stubby rear fins are reportedly out and the rear treatment will feature a huge tail light in each fender rather than the current dual treatment. Plymouth will look longer and will be lower than this year's models, and fins in the rear will be higher. This treatment will be applied to all Chrysler lines and will "peak" in the new Imperial designs.

CHROME WILL BE DE-EMPHASIZED in most lines, with the possible exception of Ford models, in deference to criticism that too much emphasis has been placed on gaudiness in the past which many feel merely adds cost. However, this does not mean it will be eliminated but merely more judiciously used. Chrome and stainless steel trims are not for show alone but in many cases to protect door panels and other parts from chips and damage in parking lots and garages.

HORSEPOWER AND PERFORMANCE characteristics are expected to remain about the same as last year. There will probably be some improvement, but the gains are not likely to be exploited as they were a few years back. On the other hand, most engineers know that those opposed to better performance usually oppose it in the other fellow's car. Performance gains will be accomplished largely through more efficiency in engines and transmissions but two makes, Buick and Olds, may add larger engines. Certainly there will be no decrease in performance because most buyers have become accustomed to present standards and would not take less.

ECONOMY OF OPERATION may be played up advertising-wise but from all reports of up-coming cars it would not seem that there will be a material improvement in this bracket. The cars will be as big or bigger than 1958, they will not be lighter and engines will have to produce extra power for power brakes, power steering, air conditioning, etc. There is also no indication of rearrangement of such accessory units under the hood that might facilitate servicing and cut service costs.

What Ford may offer for '59...

WITH A NEW FORD BODY rumored for 1959, which may be shared with Edsel, question is will these innovations make their debut in the coming year? The integral padded armrest and door control seems possible, as a similar setup is now used on Ford's imported Taunus. Padded pillars and roof are just another advance over padded visors already available.

The padded window regulator, warning reflector, padded garnish molding and entrance lights would mean extra cost.

The dished steering wheel with padded center is another advance over the present dished wheel. Ford has been studying the safety packaging of customers for years and if these features pass muster, they may be offered on the '59 models.



SUSPENSIONS AND BRAKES will be improved. There is some report that Chrysler lines may offer air springs in the rear only, with torsion springs still used in front. Dealers, on the other hand, are not too keen about present air spring systems because of service problems they create in the field. Wide acclaim accorded Buick's aluminum fin brakes this year unquestionably has spurred other makers to greater effort in this department. Whether any other GM lines will adopt a similar type brake this year is still problematical as such secrets are being carefully guarded. However, the feeling is that there may be some real advances in '59.

PRICE IS A PROBLEM that can be answered only by what agreements are finally reached between manufacturers and union leaders. Possibility of a reduction in federal excise taxes on cars which could have been passed on in the form of lower car prices have vanished for at least another year. Wage rates, even if the union accepted extension of previous contracts, would go up automatically. In view of the reduced profits, or greater losses, reported by car manufacturers as the result of the sales turn-down in the first six months of 1958, any increased costs would be passed on in increased

prices. Therefore, it's an odds-on bet that prices in 1959 will be higher.

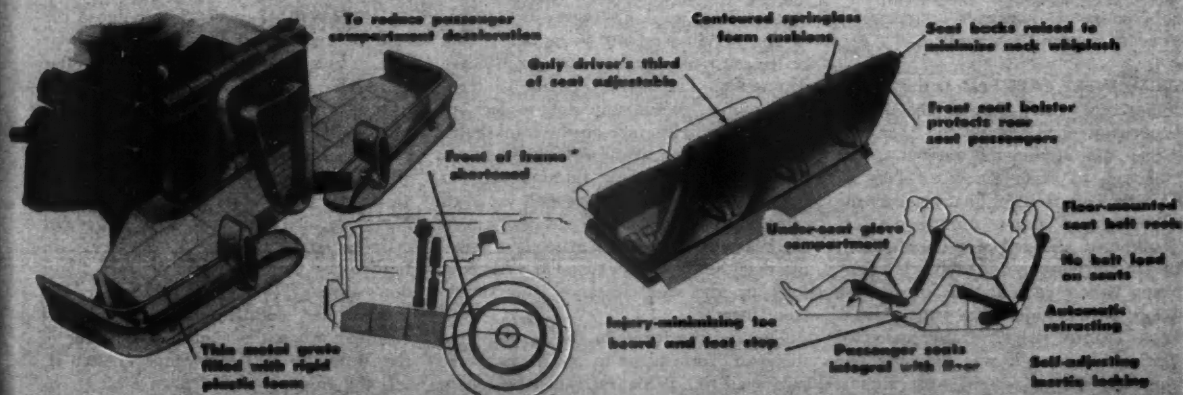
PAST HISTORY SHOWS that the introduction of new automobile models has usually resulted in loosening the nation's purse strings and starting a new buying wave that has rebuilt national confidence. Introduction of 1958 models was an exception. It came when the trend was increasingly downward and the new models sales-wise fell on their faces. Senator Kefauver, in a television interview, said he should buy a new car but the 1958 models were too big and too costly so he would stick with his 1954 model another year. This is a common complaint but it misses one point: if these big "behemoths" were as "badly designed" and "badly built" as some of the critics claim, the critics would have had to buy a new car this year or walk.

THE FUTURE WILL TELL whether or not car makers have provided sufficient appeal in 1959 models to inspire present owners to resume buying as they have in past years. We feel, from what can be gathered at this point, that new cars will have real appeal. Let's hope history repeats. /MT

...and for the future...

WHETHER THE CRASH-ABSORBING front end construction will help reduce injury is a problem now being given concentrated study at Ford Motor Co., as shown in the Edsel. This is not a front end reinforcement, as the material used is designed to collapse slowly on impact. Tests show that this material reduced impact force to that of a car going 10 mph slower.

New type seats with higher, padded backs and built-in, retractable safety belts also are being investigated at Ford. The belts remain out of the way when not in use and the higher seatback may diminish head and neck injuries to passenger in a car struck from the rear. These ideas may be used if tests prove they are worth the cost—but they are still in the future.



What Happened at INDY?



FOLLOWING WORST INDY CRASH, RATHMANN'S CAR LIES SEVERED IN FOREGROUND ALONGSIDE ELISIAN'S NO. 5 AS RACE GOES ON

Story and Photos by Don Francisco

A SIGN ON THE NEW OFFICE and museum building just outside the main entrance to the Indianapolis Motor Speedway labels the Speedway as "The Capital of Automobile Racing." This is no idle boast for on the huge track behind the new arch over the ancient gate to the 515-acre racing plant are held the world's most spectacular closed track races. Here, each year, 33 of the nation's best race cars and drivers vie for fame, acclaim, and gobs of the green stuff so necessary for existence in our modern, high-speed world.

This year's race was the 42nd annual event and, with the exception of its confused start and tragic first lap, it was a good, fast race with exceptional driving by many drivers and enough lead changing to make it interesting. But there is more to these races than the colorful climax seen by so many thousands of spectators from every state in the union.

AS WITH EVERY RACE held at the Speedway in recent years, some of the drivers and mechanics had trouble this year getting their cars around the track at speeds fast enough to make the race. Many of those who had trouble finally made the show but others didn't. Among the cars that stumbled and fell was the Duncan-Built Homes entry powered by the Tony Capanna-Wilcap modified DeSoto engine described in the June, 1958 issue of MT. MOTOR TREND was especially interested in this car because it was the only one at the race with a passenger-car engine.

Hopes for the Duncan car were dashed when the second and last of the two

engines Capanna took to the Speedway came apart on a practice lap. Rookie Jerry Unser, who was scheduled to drive the car, used it to pass his driver's test. Driver's tests include 10 closely observed laps at each speed of 115, 120, 125 and 130 mph. No drastic trouble was experienced with the engine during the test, but in subsequent practice two of its main bearing webs pulled out of its cylinder block. This failure was attributed to detonation, caused by induction firing, in one of the engine's cylinders. Induction firing results when two cables for spark plugs are allowed to be parallel and adjacent to each other for any appreciable distance. Current flowing through one of the cables induces a voltage in the other. This voltage is of sufficient strength to jump the gap between the electrodes of the spark plug to which the cable is connected. This wouldn't cause any trouble in some cylinders but in others it can be the cause of premature firing and heavy detonation. The second engine suffered rod trouble, presumably due to lack of sufficient end clearance on the crankshaft's crankpins, which would limit the amount of oil that could flow through the rod bearings. Since oil cools as well as lubricates, this impaired flow could have caused the bearings to overheat. Also, it is possible that the big-ends expanded with heat, took up the end clearance, and simply froze together.

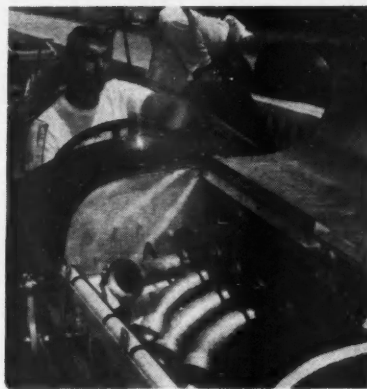
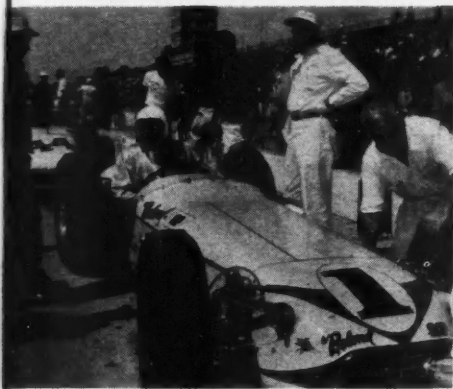
Despite the troubles he encountered this year Tony plans to try to make the race again in '59 or '60. Then he'll have a new chassis for his modified engine.

It's the consensus of most of the me-

chanics and drivers at the Speedway that a modified passenger car engine doesn't have a chance in the 500 and therefore such engines are a waste of time; this viewpoint wasn't shared by the spectators. Whenever the DeSoto rolled onto the track the people in the grandstands stood up and applauded. They gave the Novis the same welcome, and the Novis have never won a race—but this doesn't mean they never will. Whether this is merely the support spectators usually give to a recognized underdog in any sport, or a show of interest in something that isn't run-of-the-mill, it's an indication that as far as the spectators are concerned engines other than Meyer-Drakes are definitely not out of place at the Speedway. And the spectators are the ones who make the Speedway races possible.

WITHDRAWAL of the DeSoto reduced the field of entrants to its usual two Novis and an overwhelming group of the so-far unbeatable Meyer-Drakes. The 168-cubic-inch blown V8 Novis now have two spark plugs (KLG, made in England) per cylinder. Ignition for each engine is provided by a German Bosch dual magneto. Jean Marcenac, chief mechanic on the Novis, decided to try two spark plugs per cylinder after talking to engineers in Europe last year. Jean said the dual plugs don't give a Novi any more horsepower than it had with single plugs. Cutting one mag when the engine is running in the 7000 to 7500 rpm range doesn't affect the engine's performance a bit; however, dual plugs do make the engine run much smoother at lower speeds. This

How mechanics "win" the Big 500. A technical look at the engine variations and suspension problems. The inside on why Fangio decided not to run. What happened at the start and what's being done about it next year.



WIDE WORLD

OF CARS AND MEN: (At left) Jimmy Bryan in the Belond Special waits patiently; his chief mechanic George Salih (in white cap) deliberates. (Center) A. J. Watson, builder of '55-'56 winners, sits behind the wheel of John

Zink Special. (At right) Juan M. Fangio, the world champion but a dark horse at Indianapolis, discusses strategy for the big race with his manager before withdrawing. For reasons why Fangio quit, see page 68.

could mean only one thing—that with the dual plugs combustion in the cylinders of these highly supercharged engines is more complete at the lower speeds than it was with single plugs. One advantage of a smoother running engine should be a car that is easier to drive.

MEYER-DRAKE engines for the new ('57) displacement limitations of 255 cubic inches are available in several different cylinder bore/stroke combinations that provide displacements of 250 to 255 cubic inches. Some of the engines in cars entered this year were built with 270 blocks and cam drive parts on 270 crankcases, whereas others had 220 blocks and cam drives on 270 cases. The advantage of a 220 block is that it is lower than a 270, which makes the overall height of the engine lower. In cars with vertical or near-vertical engines this allows the overall height of the car to be made lower. Horsepower of these engines, as set up by the factory, is approximately 350 at 6000 rpm, with straight alcohol fuel. With modifications and nitro fuels they will deliver as much as 385 hp.

Every Meyer-Drake engine in the race was fitted with Champion spark plugs and a Hilborn fuel injector. Hilborn makes a special injector for horizontal engine installations and these were used on some new cars. George Salih's Belond AP Special was fitted with the same standard injector and special adaptor it had for the '57 race. All but two or three of the Meyer-Drakes had a Joe Hunt magneto.

Capanna's car wasn't the only one that had difficulties. For most of the cars that

didn't make the show the trouble was handling, not engine trouble or lack of horsepower. This was aggravated by the high speeds necessary for qualifying. Practically every car on the entry list handled well enough to turn laps at 139 or 140 mph but at speeds higher than this some of them would get squirrely in the turns. This doesn't instill in a driver the confidence he needs to turn the speeds required to make the race. Spot checks made this year showed speeds of 133 to 138 mph in turns and 163 to 168 on the back straightaway. Cars with slower speeds didn't make the race.

J. C. Agajanian's new Kuzma-built 98, driven by Troy Ruttman, was one of the cars that couldn't be made to handle. Chief mechanic Frank McGurk and his crew worked night and day altering the car's suspension members in an effort to find what was wrong; they had lots of luck, all bad. After Troy had attempted three or four times to get the car up to high enough lap speeds for a qualification attempt, Aggie withdrew the car and Frank took it back to Los Angeles where he and Kuzma were to do further work on it in preparation for the forthcoming Monza.

Harry Stephens, veteran Speedway mechanic working this year on a Kuzma-built Ansted-Rotary entry almost identical to Aggie's car, was faced with the same handling difficulties Aggie's crew were fighting so unsuccessfully. Finally, after every change Harry could think of had been made to the car's suspension members, its owner withdrew it from the race on the recommendation of Pat O'Connor, who had been testing it for Stephens.

O'Connor said the car wasn't safe and that in the best interests of its driver and the other drivers on the track it should be withdrawn.

IT'S TRADITIONAL for 33 cars to start the race and this year there were 56 entries. Among the 33 survivors in the starting field there were several cars that were outstanding. Last year there was one car with a nearly horizontal (18 degrees from flat) engine in the race and it was the winner. This year there were five cars with engines in this position. George Salih, designer and builder of the Belond AP Special that won both the '57 and '58 races, was the first to place the engine in this unique and apparently ideal position. The success of Salih's car in its first race prompted others to follow his lead. Two of the new cars with horizontal engines—Demler Special and Jones & Maley Special—were built by Quinn Epperly and the other two—Gerhardt Special and D-A Lubricant Special—were built by Frank Kurtis. Epperly built the tanks and formed the skin for Salih's car.

One advantage gained with a horizontal engine is a car with a center of gravity lower than can be obtained with a vertical or near-vertical engine. In cars of this type the engine's crankshaft and the transmission, driveline, and rear axle gear assembly are placed on the left side of the chassis, as is common practice now in all Speedway roadsters. This places a high percentage of the car's weight on the left side of the chassis, where it should be. Distributing the weight in this manner reduces the load on the car's outside

continued on page 64

4 Testing Wagons

The nation's "wagon train" is on the move. Why the ever-growing popularity? of four representative wagons—plus a survey of U.S. models—that helps explain

NEITHER FISH NOR FOWL, the station wagon has become a strange mixture of sedan, bus and truck. Almost as old as the automobile itself, statistics show that the first station wagon was built in 1902. What that wagon looked like is anybody's guess, but it's a good bet that anyone interested in automobiles has seen at least one of the first mass-produced wagons built in 1929 by the Ford Motor Co. Between 1902 and 1929 station wagons were custom-built luxuries that only the wealthy could afford. Now they are so popular that many manufacturers build several models of them. The Ford Motor Co., for instance, builds 17 wagon models for three of their makes of cars. Wagons of the low-priced makes are the most popular.

Early wagons had wood bodies, which may have been one of the more important reasons for their limited sales. They resembled large boxes on wheels but so did sedans of

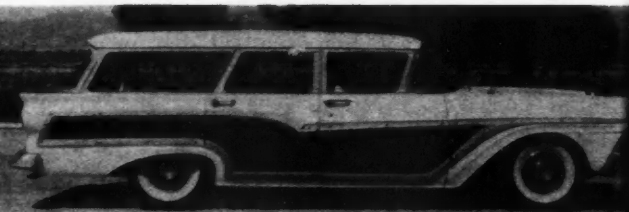
the same vintage. Today's wagons have modern passenger car styling and comfort. In 1952 the Ford Motor Co. introduced its all-steel station wagon body and this is said to have been the turning point in wagon popularity. In 1957, wagons comprised 12.3 per cent of all passenger car registrations. This represented 890,297 units. Two-thirds of these were owned by one-car families. About 68 per cent of wagon buyers are previous owners who trade in one wagon on another. Most of the balance switch from sedans.

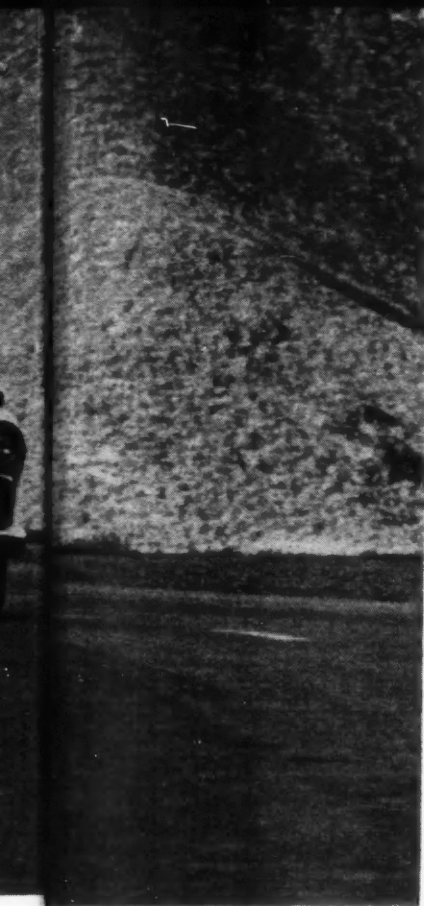
The rapidly growing popularity of station wagons is based on a firm foundation of all-around utility: they can be used both as family cars and business vehicles. They are ideal for busy families with lots of kids and things to do—the number of small kids that can be stuffed into a modern wagon is almost unbelievable. They can't be beat for outings and marketing and are excellent for car pools and hauling kids

RAMBLER REBEL CUSTOM



FORD COUNTRY SQUIRE





Y?
in

Here's a comparative test their all-around usefulness.

to school. They're ideal delivery wagons for many businesses and they provide ample room for samples and other necessities that must be carried by traveling salesmen.

Many factories and small towns have fitted wagons for ambulance use. A sportsman can carry his hunting, boating, fishing, or other equipment in a wagon and, if he wishes, sleep in it at night. These are some of the things that have made station wagons the fourth largest selling body style in the current automotive market. And the percentage is growing steadily.

Although the automotive industry's concept of a station wagon is a vehicle for carrying passengers or cargo, or combinations of both, wagons built by different companies vary considerably in size and design. This might make it difficult for a prospective wagon purchaser to decide which make to buy. His choice could hinge on many factors. Among these

by Don Francisco

could be the number of seats or cargo-carrying capacity a wagon has; the size of the wagon, as related to driving and parking considerations; economy of operation, as determined by fuel mileage; and styling.

To learn firsthand the good and bad points of the many wagon types now available the staff of MOTOR TREND took four that represent a cross-section of the current models on a two-day trek through the mountains and over the deserts of Southern California. These wagons were a Rambler Rebel Custom, a Ford Country Squire, an Olds Super 88 Fiesta and a DeSoto Firelite Explorer. All were four-door models with V8 engines and automatic transmissions. The Rambler and Olds were two-seat models and the Ford and DeSoto had three seats. Of primary concern on the trek were the features of the vehicles that add to their value as station wagons. General automotive performance was of no concern; however, some details of performance were too pronounced to be overlooked.

PASSENGER CAPACITY

The passenger-carrying ability of any wagon would depend on the size of the passengers. About the only yardstick that can be used for this factor is the number of seats in the wagon. In this respect the Rambler and Olds are definitely second choices to the Ford and DeSoto; however, in the Ford the third seat is a rather makeshift affair. It has limited headroom, because it is approximately six inches higher than the second seat, and it has very little space for passengers' feet. Its limited hiproom makes it uncomfortable for three adult passengers and the person sitting in the middle must straddle the driveshaft tunnel. The seat could accommodate three and possibly four kids in comfort. Access to the seat is simplified by the divided second seat. The right section of the second seat is attached to the floor in such a manner that it can be pivoted forward and out of the way.

In the DeSoto and other Chrysler product wagons (they all have the same body) the third seat faces the rear of the car. There is ample headroom and foot space for adult passengers. Hiproom is about the same as that in the Ford. Access to the seat is through the tailgate opening and there are rubber step pads on the bumper at each side of the opening. The seat is comfortable and facing rearward is something of a novelty for both children and adults.

Getting in and out of the rear seat of the Rambler and Olds and the second seat of the Ford and DeSoto is as easy or easier than entering and leaving the rear seats of sedans of the same makes. Front seats in all four wagons are comfortable but to me the seats in Ford products are without equal from the standpoint of comfort.

Seats in the Ford are upholstered in plastic with a simulated leather finish. I don't particularly care for full plastic upholstery because of the poor ventilation it provides but it has no effect on comfort. Seats in the other wagons are upholstered with combinations of cloth and plastic. The

OLDSMOBILE SUPER 88 FIESTA

DE SOTO FIRELITE EXPLORER





Testing 4 Wagons

Cruising comfort coupled with cargo capacity makes wagons a winning combo

continued

cloth in the DeSoto has narrow strips with a non-skid surface so the passengers won't slide on the seats.

REAR WINDOWS AND TAILGATES

Rear windows on the Ford and Olds are hinged at the top so they will open upward. The window frame on the Olds includes about six inches of the rear of the car's top. This part of the top limits the rear view mirror's field of vision unless the "transom" is open. Opening the Ford tailgate is a one-hand operation, which is convenient when one has an armload of packages. The tailgate and window are opened by pulling the latch on the tailgate. This releases the window so it can swing up and then the tailgate can be lowered. It doesn't pay to stand too close to the car when opening the tailgate because the arc described by the lower edge of the window frame could connect with a person's chin. The window can be locked in any desired position between closed and fully open by tightening knurled nuts on the telescoping straps at its ends. Closing the tailgate and window are also one-hand operations. The tailgate is lifted and lightly slammed and then the window is pulled down and pushed closed so it will latch on the tailgate.

Opening the Olds window and tailgate is a one-hand operation but it varies from the Ford in that the window must be opened first. Locks on telescoping straps hold the window in two positions. These locks make it necessary to use two hands to close the window.

In both the Rambler and DeSoto the rear window is in the tailgate and it must be lowered before the tailgate can be opened. A crank on the outside of the tailgate is used to lower the window in the Rambler. The crank must be unlocked with a key before it can be used. After the window has been lowered the tailgate is released by lifting a handle

on its upper edge and opened by swinging it down. Two spring-loaded steel cables help support the weight of the tailgate to make it easier to open and close. Opening and closing the tailgate and window are one-hand operations.

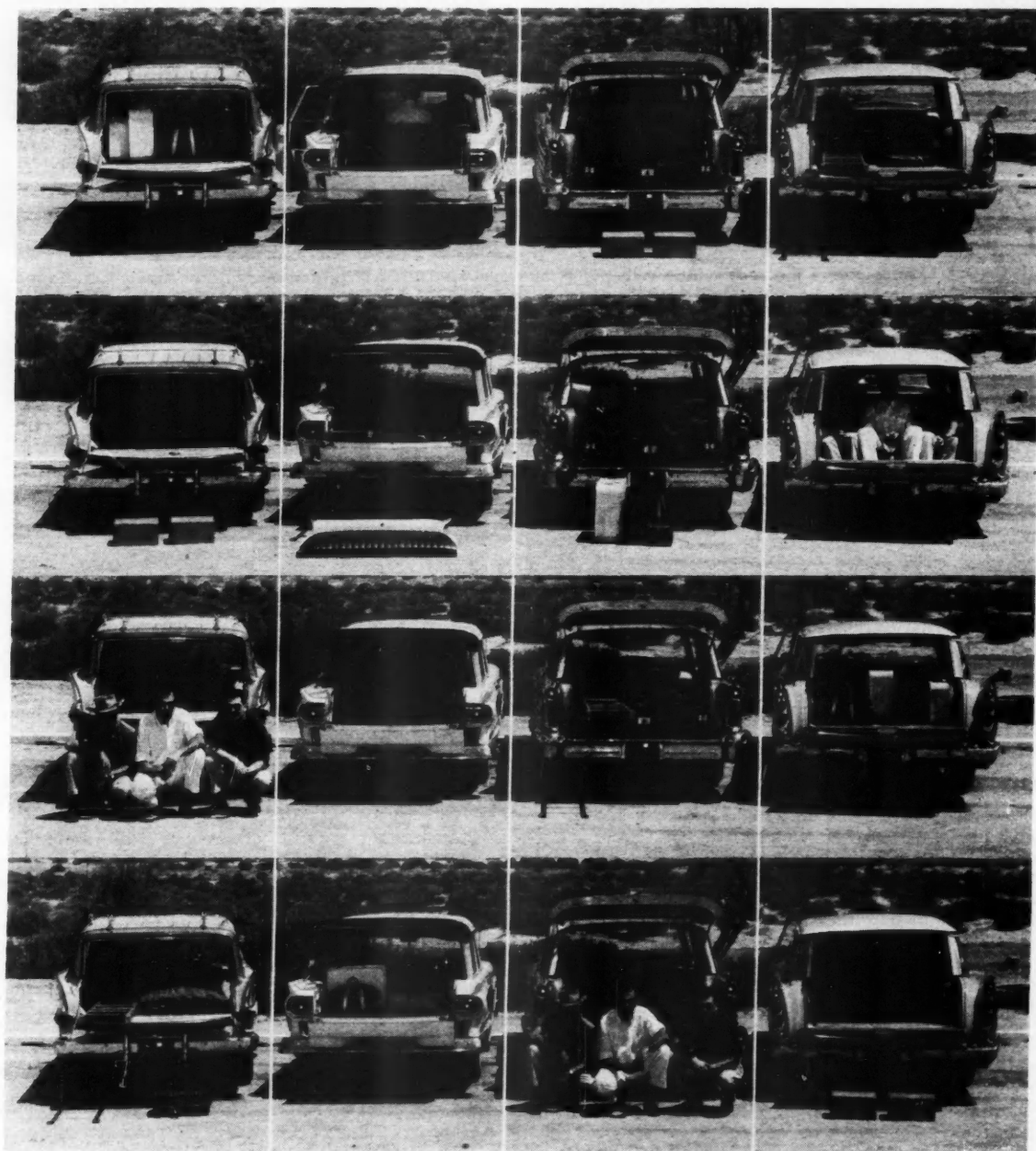
The window in the DeSoto we used on our trek is lowered electrically by turning a key in a lock on the outside of the tailgate; however, on some Chrysler product wagons the window is lowered manually with a crank. After the window has been lowered, the tailgate is released with a latch on its upper edge and then lowered in the same manner as the others. There are two additional switches inside the DeSoto for raising and lowering the rear window. One of these is directly above the window, for use by third seat passengers, and the other is under the dash just to the left of the steering column, for the driver. A switch in the tailgate opens when the tailgate is lowered, making it impossible to move the window unless the tailgate is closed. Tailgates on some of the wagons are more nearly horizontal than others when they are in their open position but the rear edge of all of them is between 26 and 30 inches above the road surface.

FROM PASSENGERS TO CARGO

Converting from passenger to cargo carrying is a simple matter in all but the Ford. In the Rambler the backrest of the rear seat folds down and is held in this position with a pair of straps that are easily attached to the seat. A robe rail on the back of the backrest acts as a stop to keep cargo from bumping the front seat. In the other wagons the cushion for the second seat is lifted at its rear edge and flipped over so its bottom side is up. The backrest is then folded forward. In the DeSoto the third seat folds down in the same manner as the second seat. The Ford presents an extra

continued on page 28

How they compare in carrying capacity



RAMBLER

From top to bottom: the Rambler had room for 12 different bags of luggage and one small briefcase; its cross-sectional area could accommodate 14 boxes; it had seating space for six passengers; and with the sleeping bag in place there wasn't room for the small bag and blanket in foreground. The ladder overhang on tailgate was 28 inches.

FORD

The Ford had capacity for nine passengers; third-seat cushions had to be removed to make room for the ladder and sleeping bag—ladder overhang was 21½ inches; cross-sectional area was adequate for 16 of the boxes; and it could hold all the baggage used in test.

OLDSMOBILE

Cross-sectional area of the Oldsmobile was adequate for only 14 boxes; it held nine bags and one briefcase; ladder overhang was 30 inches and there was also room for the small bag plus the sleeping bag; and had ample seating space for six adult passengers in front and rear seats.

DE SOTO

There was room in the DeSoto for the small bag, blanket and sleeping bag, and ladder overhang measured only 13 inches; there was room for nine passengers, with three of them in the rear-facing seat; it easily swallowed the 12 bags and one briefcase with room for more; its cross-sectional area was able to hold only 14 boxes.

continued



TURNING A CRANK lowers the rear window in the Rambler. This must be done before tailgate can be lowered.



FORD TAILGATE and rear window open simultaneously, made possible by latching the window to the tailgate.



OLDS WINDOW must be opened first before tailgate can be lowered. Telescoping straps hold window in position.



KEY INSERTED in the DeSoto tailgate lowers the rear window electrically; the tailgate can then be lowered.

At the drop of a tailgate and flip of a seat, wagon becomes beast of burden

continued

problem in that the cushions for the third seat must be moved before the deck panels that support them can be folded down. There is no provision for storing the cushions and if full advantage is to be taken of the cargo space it is necessary to store them somewhere outside the car. This is all right if the cushions won't be needed but it's inconvenient if there will be a need for the third seat before the car is returned to where the cushions are stored. In respect to cargo capacity and changing over from passengers to cargo, DeSoto and other Chrysler products are far superior to other wagons.

Cargo deck surfaces of the Rambler and DeSoto are covered with rug material. In the Rambler the covering is held in place with snaps but in the DeSoto it is installed permanently and presents an attractive, finished appearance. Heavy plastic is used on the decks of the Ford and Olds and although the plastic is probably more durable than carpet material for rough use, it's not nearly as attractive. The DeSoto has plastic scuff panels above the cargo deck to minimize damage to the interior from sharp or heavy objects.

CARGO CAPACITY

As the figures on the specification chart on page 31 show, the DeSoto has the longest cargo deck and the largest interior cargo capacity of the wagons used on the trek. It also has the widest deck. Next in capacity is the Ford, with the Rambler and Olds running a close race for the smallest capacity (of the wagons tested).

Additional cargo space of a very practical nature that isn't influenced by seat position is provided by a roof rack on the Rambler. The rack is sturdy enough to hold considerable weight and it has facilities for tying down cargo. Roof racks are available for any wagon in both permanent and removable types but they are fairly expensive. About the rear two-thirds of the Olds top is reinforced with chrome strips that run lengthwise and Olds has as an accessory a permanent roof rack that uses these strips as cargo supports. These strips also help stiffen the large expanse of sheet metal and it is possible that even without a rack they could be used to support light cargo that could be held in place with tie-down straps. Longitudinal ribs pressed into the Ford top serve to strengthen the metal considerably but they would be of no value for cargo.

The DeSoto's top doesn't have ribs of any type nor does it have exterior stiffening members. Air pressure from a huge blower used in a wash rack where we had the cars washed pushed in the DeSoto's top but had no effect on the others. The top popped out again as soon as the car had passed under the blower; this was a visual lesson that proved the value of stiffening of some sort in such large expanses of sheet metal.

OUT-OF-SIGHT STOWAGE SPACE

One thing many car owners don't like about station wagons is that everything stowed in them, except articles that will fit in the glove compartment, is visible to anyone looking

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through the windows. None of the wagons taken on the trek has compartments for out-of-sight storage, but the Chrysler Corp. has given this problem considerable thought. Some of their wagons have a compartment for this purpose. This is in two-seat wagons that have the optional fender well spare tire mount. The fender well mount is available for approximately \$28 and it releases the space under the rear portion of the cargo deck usually filled with the spare tire for cargo storage. The compartment is said to be large enough for two suitcases or equivalent and its lid is fitted with a lock.

In the DeSoto we had on the trek there is quite a bit of room under the second and third seats when they are folded down in which cameras and other small items of high value could be carried. In the other wagons storage space of this nature is practically nil. Available for some wagons are covers made by specialty manufacturers that snap in place just below the windows to cover the cargo deck. The psychology of such a cover is that things out of sight aren't a temptation to light-fingered characters. A cover of this type might be worth its cost to a person who uses his wagon to transport valuable merchandise or possessions.

WEIGHT-CARRYING CAPACITY

Station wagons aren't designed to haul rocks and gravel, but their weight-carrying ability might be important to some owners. There aren't any specifications to bear me out on this but from indications noted on the trek it would seem that the Olds could probably carry the greatest dead weight with minimum chassis spring deflection. DeSoto and Ford have about the same capacity, which isn't much

less than that of the Olds, and the Rambler's capacity is lowest. Overload springs are available for all makes of wagons. Although they make it possible to carry heavier loads than are practical with just the standard springs and to tow heavy trailers, most overloads stiffen the car's suspension so much that the car rides rough when it is empty. A man who plans to transport heavy cargo or tow a heavy trailer very often would be wise to buy a truck of some sort rather than a wagon. However, the passenger-carrying capacity of most trucks is limited to a single seat, making such a vehicle impractical for transporting more than one or two passengers. The question resolves back to the old story of trying to have your cake and eat it too.

SLEEPING CAPACITY

With the second and third seats folded down, all the wagons have ample cargo deck length for sleeping purposes with the tailgate closed. Width of the deck, as determined by the distance between the wheelhouses, is enough that it is possible for two persons to sleep side by side. There isn't as much room as in a king-size bed, but it's adequate. No deck is soft enough for sleeping without some type of mattress but mattresses ranging from air-inflated types to thick sponge rubber pads are available for wagons of all makes.

Rambler retains the reclining front seats that make into a bed. These seats were first used as a standard equipment many years ago by Nash. Backrests for the seats have five positions that range from upright to horizontal. On long trips it's nice for the front seat passenger to be able to change the backrest position for sleeping or relaxing; however, the backrest can't be lowered to its horizontal position

PHOTOS BY BOB D'OLIVO



REMOVABLE PANEL in the Rambler's rear deck conceals the spare tire and jack. The wheel can be rolled out.



HINGED PORTION of the cargo deck covers the spare tire and jack in the Ford wagon. Access isn't too difficult.

AS IN THE FORD, hinged panel in the rear portion of the Olds' cargo deck also covers the spare and jack.



TEST DE SOTO had Captive-Aire tires; therefore it didn't carry a spare. Its rear-facing seat was comfortable.





CONVERTING THREE-SEAT Ford wagon from passenger-carrying to cargo-carrier requires removal of third-seat cushions.



DE SOTO'S TWO REAR SEATS fold down easily, giving 10-foot cargo deck flanked by plastic scuff panels.

Testing 4 Wagons

continued

unless the front seat is all the way forward. With the seat in this position only a midget could drive the car. The bed formed by the front seats is approximately five feet square and measures nearly six feet from corner to corner. It's far from flat and doesn't look as though it would be too comfortable without the optional air mattress you can get from the dealer.

BODIES

One thing noticed on the trek was the great difference in the tightness of the cars' bodies. In this respect the Rambler, with its all-welded unit body and frame construction, was much superior to the others. All Ramblers are built with this type of construction and are virtually squeak- and rattle-free. The solid feel of the car that results is a genuine joy for the driver and passengers. This solid feeling extends to the suspension members to the extent that wheel movement is felt to a much lesser degree than in most cars of other makes. Second in body tightness was Olds, third was DeSoto, and last was Ford. A tight, well-insulated automobile body can add considerably to driving pleasure.

DRIVABILITY

The light weight and comparatively small size of the Rambler make it easier to handle than the other wagons. Its curb-to-curb turning radius, which might be a factor to be considered for city driving, is three feet less than that of the Ford, $4\frac{1}{2}$ feet shorter than that of the Olds, and over nine feet shorter than that of the DeSoto. Its short overall length makes it easier than the others to park. Ford and Olds wagons are practically identical in overall length and the DeSoto is a full foot longer than the Olds.

The heavier wagons have a smoother ride than the Rambler. In mountains the tires on the Olds squealed on turns where the tires on the other wagons did not make a sound. The Rambler is easiest to drive on mountain roads at ordinary speeds but at high speeds it must be watched closer than the others to prevent it getting out of hand and trying to drift.

continued on page 58

COMPARISON

MAKE AND MODEL	No. of Pass.	Overall Length	Overall Height	Overall Width
BUICK Estate Wagon & Riviera 4-dr.	6	212	58	78
CHEVROLET Yeoman 2-dr. Nomad & Yeoman 4-dr. Brookwood 4-dr.	6 6 6 or 9	209	59	78
CHRYSLER Windsor Town & Country 4-dr. New Yorker Town & Country 4-dr.	6 or 9 6 or 9	218 220	57	80
DE SOTO Shopper & Explorer 4-dr.	6 or 9	218	57	78
DODGE Suburban 2-dr. Sierra & Custom Sierra 4-dr.	6 6 or 9	216	57	78
EDSEL Roundup 2-dr. Bermuda & Villager 4-dr.	6 6 or 9	205	59	77
FORD Del Rio Ranch Wagon 2- or 4-dr. Country Squire & Country Sedan 4-dr.	6 6 or 9	203	59	78
MERCURY Voyager & Commuter 2-dr. Colony Park, Voyager & Commuter 4-dr.	6 6 or 9	214	58	79
OLDSMOBILE Fiesta 4-dr.	6	208	58	79
PACKARD 4-dr.	6 or 9	205	61	77
PLYMOUTH Custom & Deluxe Suburban 2-dr. Sport, Custom, Deluxe Suburban 4-dr.	6 6 or 9	213	57	78
PONTIAC Star Chief Custom Safari 4-dr. Chieftain Safari 4-dr.	6 6 or 9	211	59	77
RAMBLER Cross Country 4-dr. Ambassador Cross Country 4-dr.	6 6	194 203	58	71
STUDEBAKER Scotsman 2-dr. Provincial 4-dr.	6 or 9 6 or 9	202	61	76



FOUR SLEEPERS can be accommodated in the Rambler in an emergency, especially if two of them are children.

The front reclining-seat bed isn't long enough for adults of normal height but there is room for them in the rear.

OF '58 U.S. STATION WAGONS

	Overall Width	Rear Opening Height	Rear Opening Width	Tailgate to Ground	Hip Room Front Seat	Hip Room Rear Seat	Rear of Front Seat to Rear of Floor Gate Open	Rear of Front Seat to Rear of Floor Gate Shut	Rear of 2nd Seat to Rear of Floor Gate Open	Rear of 2nd Seat to Rear of Floor Gate Shut	Max. Height Roof to Floor	Width Between Wheel Housings	Approx. Floor Area Behind Front Seat (in square feet)		Cargo Capacity (cubic feet)	
	78	28	47	21	63	62	103	84	56	47	31	44	38	31	65	BUICK
	76	30	47	29	62	62	110	91	79	60	34	47	48	40	88	CHEVROLET
	80	29	46	28	63	62	120	99	86	65	33	48	51	43	85	CHRYSLER
	78	29	46	28	63	62	120	99	86	65	33	46	51	43	95	DE SOTO
	78	29	46	28	63	62	120	99	86	65	33	46	51	43	95	DODGE
	77	27	46	24	60	60	106	85	73	52	35	42	44	35	79	EDSEL
	78	28	45	30	60	60	110	88	76	52	35	42	46	43	79	FORD
	76	27	49	26	61	63	127	98	89	60	34	44	49	38	87	MERCURY
	79	28	47	29	62	59	96	84	65	47	31	43	29	28	64	OLDSMOBILE
	77	30	45	27	60	57	102	82	67	50	38	42	35	28	93	PACKARD
	78	29	46	27	63	62	120	99	86	65	33	46	51	43	95	PLYMOUTH
	77	30	47	24	62	63	109	91	79	61	34	46	38	32	73	PONTIAC
	71	25	51	26	60	60	105	82	71	49	29	43	43	34	80	RAMBLER
	76	30	45	29	60	57	102	82	67	50	38	42	35	28	93	STUDEBAKER

'52 Kaiser Traveler, newly powered with '57 DeSoto V8, becomes MT's testing laboratory on wheels

by Don Francisco

WALT, I PICKED UP a crazy gadget today for a product use test."

"Good. Put it on your car and we'll test it."

"Can't use my car. My wife's driving it now."

"Well, how about Erv's car?"

"It's in the shop getting a ring job."

"MOMENT"

That's the way it went, month after month. New automotive products kept popping up. MOTOR TREND wanted to test them, but there never seemed to be a car around that could be used for the test. But now all that is history. MOTOR TREND has its own test car that is available at any time to test practically any automotive product.

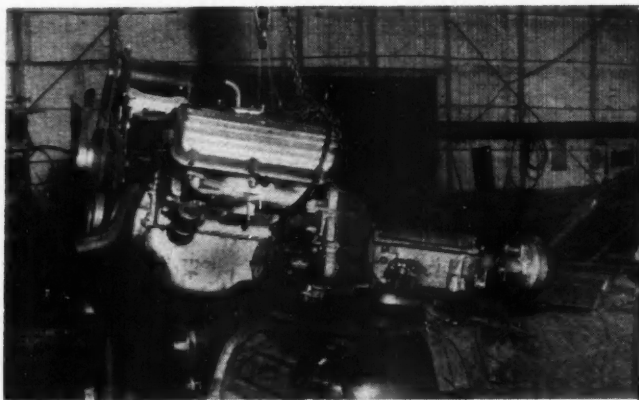
A '52 Kaiser Traveler chassis was chosen for the base of the test vehicle because its body is a cross between a station wagon and a sedan. To make the car drivable and to provide a modern engine that would test any product designed to im-

The stripped engine and transmission assembly was then lowered into the chassis to see just how much clearance there was around it. The transmission couldn't go back as far as it had in the frame because the emergency brake assembly in its rear end wouldn't go through the opening in the frame's member. So the brake assembly was removed.

Now, at the end of the transmission would pass through the opening in the X-member but the engine still wouldn't go back far enough because the rear of its cylinder heads bumped the firewall. The cure was cutting a section a little wider than the engine and high enough to provide clearance for the engine distributor out of the firewall, and moving it back four inches. The gap between the firewall and the section moved back was then filled with sheet metal, and the pieces were welded into a single unit. The bump in the floorboard for the stock transmission was slit down its middle and opened like a V with the open end of the V at the firewall. The firewall was trimmed



PULLING Kaiser Traveler's stock Continental engine was easiest part of job. Problems started from here.



DE SOTO engine and transmission assembly are tried for size in Kaiser. Frame member interfered, was removed.

prove engine performance, it was decided to install a '57 DeSoto V8 engine and TorqueFlite transmission in it.

It was expected that the 341-inch DeSoto, rated at 295 hp, would improve the Traveler's performance considerably. That such expectations were not unfounded is easily proved by comparing these test figures made in 1952 on a new Kaiser with those made recently with the "KaiSoto":

ACCELERATION	Kaiser	'52 Kaiser
0-30	3.0	5.5
0-60	8.3	18.9
Quarter-mile	16.6 and 87 mph	19.7
PASSING SPEEDS		
10-60	7.3	23.4 (in high gear)
30-60	5.3	15.0 (" " " ")

The job was taken to Bill Ginder, of Ginder Brothers Garage in Los Angeles. The first thing he did was to strip the gearshift and clutch linkage out of the car because they wouldn't be used with the new transmission. Then to make it fit, he pulled the engine's oil pan, oil pump and pickup tube assembly, oil filter, left exhaust manifold, and ignition distributor.

to match the hump's higher position, which provided clearance for the DeSoto bell housing.

The breather pipe at the rear of the engine bumped the firewall but this was easily taken care of by loosening the bolt that holds it in the tappet chamber cover and then pivoting its lower end forward about four inches. There wasn't adequate clearance between the transmission oil filler tube and the floor-board and firewall. The tube was cut at a point near its transmission end where it is parallel to the centerline of the transmission and a five-inch length of steel tubing was inserted between the ends of the tube and welded in place.

With the engine nearly in position, the only point of interference that remained was between the rear of its left cylinder head and the mast jacket on the steering column. The jacket was heated and flattened to a depth of approximately half an inch and for a length of approximately three inches.

The motor mount insulator on the rear of the DeSoto transmission is a simple pad of rubber with steel flanges bonded to it so it can be bolted to the transmission extension housing

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and the support on the frame. A piece of angle iron was welded to the frame's X-member at the correct height so that when the insulator was bolted to one of its flanges the center of the transmission output shaft would be in the center of the opening in the X-member.

Bill had decided to use 1949 Cadillac front motor mounts. These consist of rubber biscuits with a steel bracket for bolting them to the cylinder block bonded to their top surface, and a steel flange with a half-inch-diameter threaded stud in its center bonded to their bottom surface. The brackets on top of the mounts were identical in shape to those for the DeSoto; these were fitted by enlarging the bolt holes to $\frac{7}{16}$ -inch. The insulators were bolted to the engine and then supports were fabricated from $\frac{1}{4}$ -inch steel plate and welded to the frame's front crossmember in the correct positions.

The most important point of interference remaining was between the sump on the front of the oil pan and the steering arm at the middle of the frame's front crossmember. In these engines the oil pump is bolted to the rear main bearing cap; a long tube bolted to the pump extends forward to the sump to support the oil pickup housing and screen. This made it possible to move the pickup assembly to the rear of the engine so the pan could be altered.

A '52 Chrysler V8 pan was the final solution. This pan has its sump at the rear and it bolted to the block without any alteration. However, before the pan's sump would clear the steering arm it was necessary to take a two-inch slice out of it and move its front side back this two inches and weld it

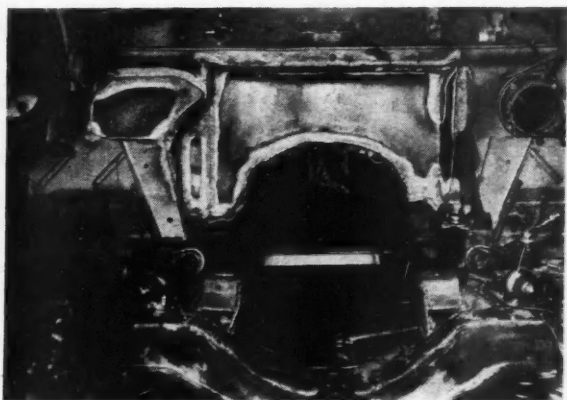
of steel tubing. The header provided ample clearance between the steering gear box and the engine. A pair of Belond 30-inch Fiberglas-packed mufflers and custom tailored two-inch-diameter headpipes and tailpipes completed the exhaust system. Two-inch pipes were used to reduce back pressure in the system.

Walt wasn't hot to use the pushbutton transmission control that is stock on the TorqueFlite but at the same time there didn't seem to be much else that could be done. The pushbutton assembly was bolted to the right side of the steering column just below the steering wheel, a more convenient location than at the left end of the dash.

A 1952 Dodge accelerator pedal assembly was installed in the stock accelerator position and connected to a modified DeSoto bell crank and bracket assembly bolted to the front side of the firewall. A DeSoto downshift lever control rod was used between the transmission lever and the throttle pedal after it had been shortened three inches and bent to fit.

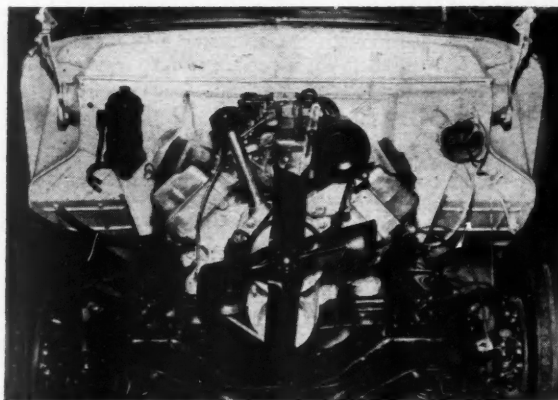
The Kaiser radiator has ample capacity for the DeSoto and the only modification that had to be made to it was to move its lower fitting from the right to the left side. A fitting with a $1\frac{3}{4}$ -inch outside diameter was used in place of the stock $1\frac{1}{2}$ -inch fitting to match the inlet opening on the DeSoto water pump. The $1\frac{1}{8}$ -inch-thick spacer between the fan and the water pump pulley was removed to provide more clearance between the fan and radiator.

Converting the chassis from its original six-volt electrical system to the engine's more modern 12-volt system created some of the problems that are becoming common in conver-



PHOTOS BY BOB D. OLIVO

KAISER firewall required considerable cutting to fit the DeSoto. Floorboard hump was enlarged for bell housing.



FINISHED INSTALLATION is neat, was no more difficult than most engine swaps. Performance is worth effort.

in place. The gap left in the front portion of the pan was covered with a piece of the slice taken out of the sump.

Bill estimated that he could restore the sump's original capacity by cutting a round hole in its right side so the bottom of the hole was level with the sump bottom. He then brazed the cover from an oil filter over this opening so the cover extended out from the side of the sump. These modifications to the pan and pump assembly provided clearance for all parts of the steering linkage, making it unnecessary to alter the linkage in any way.

Installing a Hildebrand adapter plate on the oil filter pad at the right rear of the cylinder block and bolting a '48 Chrysler Six full-flow filter to the right side of the firewall solved the oil filter problem. The filter was connected to the adapter pad with two lengths of $\frac{1}{2}$ -inch inside-diameter neoprene hose.

The only remaining point of interference was between the left exhaust manifold and the steering gear housing. Since the stock manifold could not be used, Bill made a header for this side of the engine from part of the stock manifold and lengths

sions of this type. Electrical power is provided by a '57 Ford battery that was chosen because of its outside dimensions. The original battery box in the left front fender panel was lengthened to $12\frac{3}{8}$ inches and narrowed to $5\frac{1}{2}$ inches for the battery. A new cable of suitable length was then used to connect the positive terminal of the battery to the terminal on the starting motor solenoid. The negative terminal of the battery was grounded, as is common practice with 12-volt systems. This made it necessary to reverse the wires on the Kaiser ammeter because the original Kaiser electrical system was positive-grounded.

A new Autolite generator regulator was installed in place of the Kaiser regulator. The starting motor is controlled by the Kaiser instrument panel button which happened to be of the two-pole type that must be used with Chrysler starting motor solenoids. The DeSoto ignition coil resistor was connected to the Kaiser ignition switch.

All the original Kaiser instrument panel gauges were used. The Kaiser heat indicator sending unit and a '55 Mercury

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"My Greatest Thrill"

TARUFFI'S FINAL TRIUMPH

"With a sinking heart, I heard a grinding noise in the differential. Knowing that rear axle failure at 160 mph could cause disaster to myself and others, I was ready to retire..."

as told to Gordon Wilkins

IN 1957, PIERO TARUFFI was in his 52nd year. His shock of wavy white hair together with his profound knowledge of motor racing had earned him the nickname of the Silver Fox. He had already passed the age when most front-rank drivers find it prudent to retire. He had garnered enough successes in a long career to satisfy most people; in fact, it was doubtful if any other driver had handled so many different types of machines.

In 1923, at the age of 17, he won his first event with the family Fiat, then switched to motorcycles. He became a star rider on Guzzi, Rondine and Gilera machines, with many victories and 38 world records to his credit. But he kept going back to cars and built himself a reputation as one of motor sports' greatest all-arounders. In 1930 he won the Tunis-Tripoli race on an Alfa Romeo; in 1933 he brought an Alfa into third place in the Mille Miglia behind Nuvolari and Cortese and in 1934 he was fifth on a Maserati. In 1937 he was back again on two wheels, setting a new absolute world record for Gilera.

After World War II, he started a new career at the age of 40, first with Cisitalia and so on to all the leading teams. He won the Carrera Messicana on a Lancia, added the French Grand Prix to his trophies in 1952 and the Swiss Grand Prix in 1955. He had driven for the official teams of Ferrari, Maserati, Bugatti, Alfa Romeo, Lancia, Mercedes-Benz and Vanwall, and collected a whole stack of speed records on a series of twin-boom "bisiluro" cars which he designed himself. But one prize eluded him.

Thirteen times he had driven in the Mille Miglia. He had placed and had twice won his class, but outright victory had escaped him, often after he had led the race at record speed for anything up to half distance.

"Usually it was the transmission that failed," Taruffi told me. "In 1952 when Bracco won, I was seven or eight minutes ahead of him when my transmission broke. When Biondetti won in 1953 I was well placed when the transmission broke. In 1954 it was slightly different but the result was the same. I led the race to Pescara at 110 mph on the Lancia and had five minutes' lead over Ascari when a touring car pulled out just as I was overtaking it and forced me off the road. In 1955 when I was trying to hold off the might of the Mercedes team, it was transmission again, but in 1956, when Castellotti won in a nonstop downpour I had brake trouble. I had suffered brake overheating in Sicily, so I fitted big airscoops for the Mille Miglia. The scoops simply filled my brakes with water and I skidded onto the sidewalk, damaging my radiator."

Obviously in all these recent races Taruffi had been going all-out to win, but he did not have a reputation as a transmission breaker; indeed, as an engineer, he knew better than most drivers how to nurse the mechanism. Why then all this transmission trouble in the Mille Miglia? Says Taruffi:

"The Mille Miglia imposes strains on the transmission which you do not encounter in any other event. At Le Mans, for example, the straight is relatively short and you can hold maximum speed for only a few seconds at a time. On the long run down the Adriatic coast there are half a dozen places where you can hold maximum speed for from five to 15 miles at a time. The roads are not always dead smooth, and the tire technicians insist on very high pressures—as much as 60 psi—to conserve the tires. And so the wheels patter over the rough stretches and this severely punishes the driveline."

continued on page 57

Taruffi in Ferrari crosses the finish line barely ahead of von Trips to win the '57 Mille Miglia

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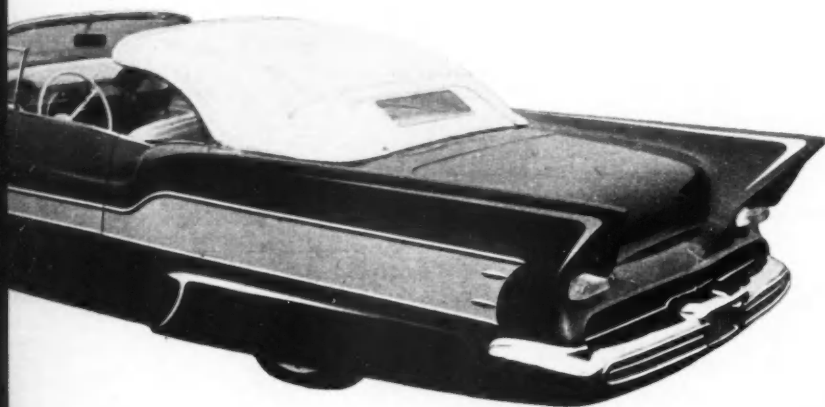




George "Kustom" Barris

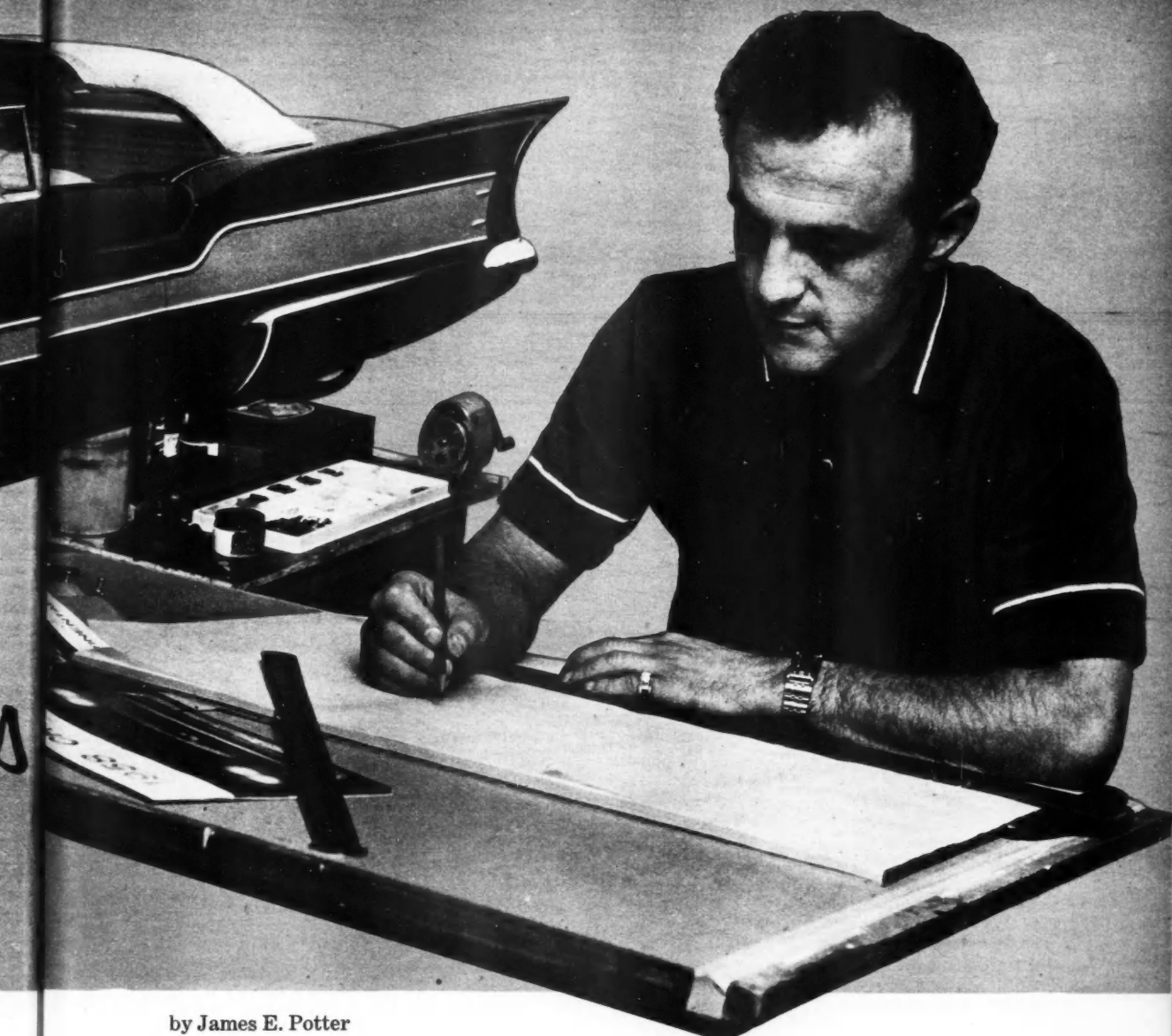


The Man Who Changes the Face of Detroit



The growth of Barris, the designer, into a newly recognized maturity is seen in the radically restyled '55 Chevrolet convertible, owned by Bill Carr of Hollywood. Barris pulled out all the plugs in both quality of workmanship and in his innate creative ability and came up with a custom that's bound to catch the interested eyes of those behind the drawing boards in Detroit. Highlights of the car are a Parisienne-type half removable top, outward-canted rear fender fins with specially designed red reflective tail lights and magnified lucite backup lens. Widened front fenders hold Turnpike quad headlights; front and rear shell openings match, as do twin airscoops in the hood and the upper and lower airscoops in reshaped side body panels.

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by James E. Potter

ON OPENING NIGHT of the 1954 Motor Revue—a spectacular custom car and hot rod show produced by Robert E. Petersen and the several automotive enthusiast magazines under his wing—a well-dressed middle-aged man and his mink-coated wife made their way through a packed youthful crowd to the show office of the Pan Pacific Auditorium in Los Angeles and demanded their admission money back. Asked why, the woman immediately began a vociferous blast of critical verbiage indicating her extreme disgust for the automobiles on display at the show. Her husband explained indignantly that, although they were vitally interested in automobiles, “the bulbous metal abortions called customs and specials were a far cry from the new Detroit models and experimental cars that they had expected to see.”

On feature display that year was the fabulous \$25,000 “Golden Sahara,” a futuristic low-slung automobile designed and built from the chassis up by the well-known customizer, George Barris, and Sam Barris, his older brother. This luxury custom—with its TV set, bar, hi-fi, tape recorder, thickly-

padded upholstery, and good-looking lines—George still considers to be his best effort; he later sold it to Jimmy Skonsakas of Ohio for a reported figure in excess of \$20,000. Also, on display were over 75 other customs, about 30 of which the Barris brothers had restyled in their Lynwood, Calif. shop at a cost to the youthful owners which often went into the four-figure category.

Thus, there exists a sharp difference between extreme dislike and *costly* enthusiasm for the so-called restyled or custom automobiles for which body artists like George Barris and his growing list of imitators are responsible.

Be that as it may, there is little doubt but what the youth of the country follow the creative efforts of Barris with a zeal that approaches reverence, if you can accept the upsurge in circulation of the automotive enthusiast magazines as a criterion; for it is in the pages of these monthly publications that you'll always find a custom by Barris.

How did George get into customizing? Actually, his parents had hoped he would follow the family tradition and

The Man Who Changes the Face of Detroit CONTINUED



go into the restaurant business, but in 1929 the family pulled up stakes in Chicago where George and brother Sam were born and moved westward to the Sacramento valley, finally settling in Roseville, Calif. There, George told me, "When I was eight, I got real good at building model airplanes. Then I switched to model cars, and became so good at this hobby that I won several model-building contests. I took home prizes for both construction and design."

In school, George showed keen interest in the arts — including drawing, music and drama — undoubtedly stemming in part from his Greek ancestry, noted for its sculpturing, painting, music and drama. But this natural inclination was augmented by a youthful desire to ride on wheels, so George and Sam pooled their resources and bought a dilapidated 1925 Buick. Sam tried his hand at straightening the mangled fenders while George took up brush and deftly painted the car — orange and blue with diagonal stripes of rainbow hues! Thus, the Barris brothers "worked over" the first of thousands of cars that were to become their eventual livelihood.

From the old Buick, they "advanced" to a '29 model A Ford. Like its predecessor, it received the Barris "touch." This included the installation of six aerials (the car had no radio), extra lights of all descriptions, fake supercharger pipes, winged ornaments, and foxtails!

This was the humble beginning of customs by Barris. As he continued to putter around with his and his friends' cars, his interest in the automobile as "an object of art" began to mount. It was then that he began spending his spare time at a small local body and fender shop. He watched quietly at first, but soon he was asking questions. Fortunately, the owner put up with George, finally going so far as to let him do a little welding. Gradually, he worked himself up to bigger jobs, one of the first being the "setting in" of the license plate on a '36 Ford. This initial brush with the automobile re-

An early-Barris custom, completed in 1945, is this '41 Buick with its filled-in rear windows, chopped top, full fadeaway fenders, radically slanted door posts. Simplification of design by eliminating the exterior chrome is evident in this custom.



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Advance design work is indicated in this '47 Cadillac with its de ville-type leather-covered top, removable wrap-around rear window glass, and the "floating" separated front bumpers. Body sculpturing is evident in the front fender crease which fades into the frenched headlight, and the slightly peaked hood, shaved of its usual ornamentation. Floating-type grille is set into a reshaped horizontal chromed shell.



This '34 Ford coupe is one of Barris' first customs built for a "client." Lowering was accomplished by chopping the top and inserting a metal turret in place of the fabric covering. Such routine modifications as removing the bumper guards, installing twin spotlights and special hubcaps, and removing all the emblems were practiced in the early Forties by George and his brother Sam, who no longer is in the business.

styling art made up his mind for him — George was going to do creative metal bending on cars!

Next step placed him in the backyard shop of Harry Westergard, a true pioneer restylist. Carefully following the instructions of the older custom bodyman, he soon learned the art of "body layout" and "paneling," terms foreign to the ordinary body and fender man.

"All this time," George says, "I kept up my schooling. I took extra courses like shopwork, mechanical drawing, and

designing. After school on the first car I ever owned by myself (a '36 Ford coupe), I changed the tail lights, added skirts and ripple discs, simplified the grille, and took off all exterior handles. I put on pushbutton doors and rear decklid, set the rear license plate into the body panel, and finished the job with a *superb* lacquer job." He admits, "This can't be considered much by today's standards, but back in 1941 it was real pioneering."

Having been turned down by Army and Navy doctors



A spectacular showpiece is this Fiberglass-bodied two-seater, which was designed and rebuilt for Marie "The Body" MacDonald at the request of husband-shoe manufacturer, Harry Karl. Barris is well known for his high-gloss, mirrored exterior finishes; this LeMans Cadillac is painted with crushed platinum dust and trimmed with 24-karat gold and platinum accessories. The removable top is transparent plexiglas. The interior features a TV set, bar, and tape recorder, as well as a full range of instruments.

The Man Who Changes the Face of Detroit CONTINUED

during the second World War, George moved to Los Angeles, taking his belongings and what body tools he had accumulated. He hacked away at a newly purchased '36 Ford convertible, giving it the Barris treatment by removing the running boards, molding in new tail lights, setting in the rear license plate, adding custom skirts, installing dual exhausts, removing all emblems and door handles, and chopping the top. The car made quite an impression on the youth in the south part of Los Angeles. After a short stay in a regular body and fender shop as a metalman, George soon had his own small but extremely busy shop.

Sam joined him in 1945 when he was discharged from the Navy and within a couple of years Barris Kustoms, newly located in Lynwood, Calif., began to hum with the activity of scores of cars endlessly streaming through the shop, sometimes altered to the owner's specifications but more often than not changed according to the ideas dreamed up by George. The pattern thus established, Sam became

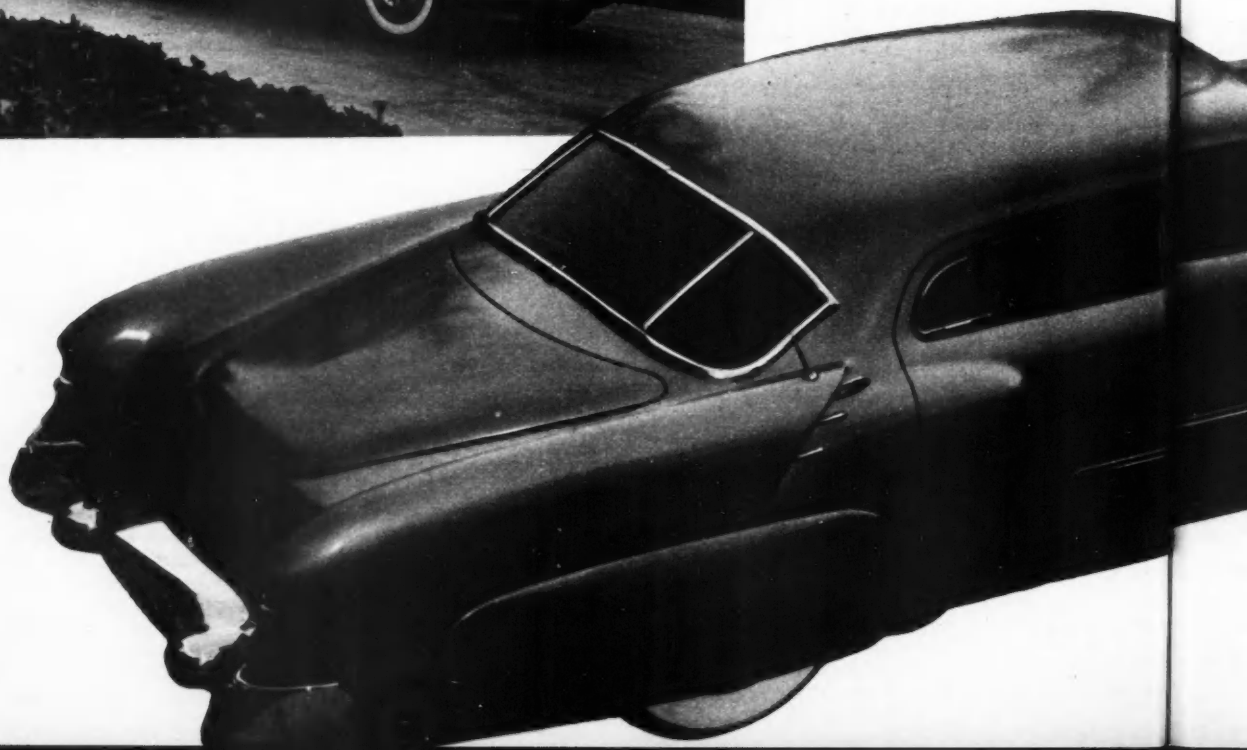
Shop Foreman, the executor of the ideas, and George did the creative design work.

Soon customers began bringing their cars from the Midwest and East for modifications. It was also during this period that European cars began to appear on American soil. Their styling so intrigued George that he took off for Europe to see for himself what was being done in the automotive plants of Italy, France and Germany.

Crammed full of new designs and ideas, George returned to the U. S. "I was soon working on cars belonging to people in the entertainment world," Barris boasts, "including Lionel Hampton, Don Wilson, Liberace, and George Raft. They all want just customized American cars, so most of my foreign design ideas are in the back of my mind. Someday, I hope to use them, when the situation permits."

In the past 10 years, there is little doubt that Barris has modified more cars than any of his well-known predecessors, such as Derham, Fleetwood, Bohman and Schwartz, or

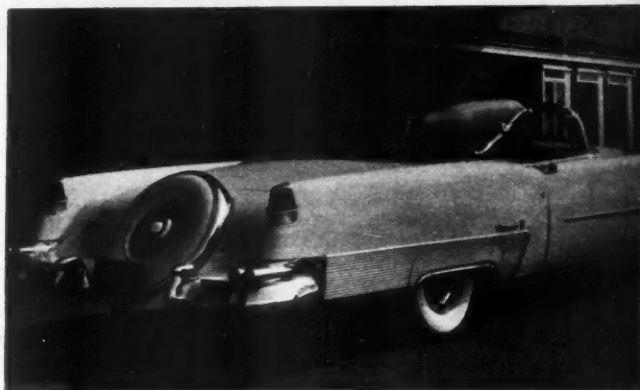
Successful restyling in metal is clearly seen in this unrecognizable 1948 Studebaker sedan. Completed in '52, the four-door custom features such Barris firsts as airscoops above each headlight (similar to '55 Pontiac), and rear fender scoops (somewhat like '57 Studebaker). The large rear fender shield is built right into the body, making tire changing easier. As radically restyled as they come, the car has a reformed chopped top, body has been sectioned, and the grille shell and hood taper below front fender line and headlights. Pancake-type hood and rear deck complement each other.



Darrin. His run-of-the-mill customs, in the eyes of many, may never even approach the quality of design in which these coachmen share nearly equal honors; but a few of his top show cars (he's built scores of them) do give him justifiable recognition as an automotive custom builder and designer of some talent.

For instance, again consider the "Golden Sahara." On this particular car, every body section was handformed into a Barris design that certainly has graceful eye-appeal. The bumper bullets, entirely new at the time the car was built, later came out on Cadillac and became famous. Also new was the checkered grille, later to be seen on the '55 Ford. The thin-line rear fender fins, new then, today are seen on more than one make being built in Detroit. The spare tire well, impregnated in the rear decklid, appears on '57-'58 Imperials. Perhaps these were ideas already on the drawing boards in Detroit at the time the "Golden Sahara" was being constructed; but, like many another idea that is dreamed up by different people in different locations at the same time, George was able to build it first because of his hand-formed methods. One item that Detroit probably will never use is the 24-karat gold trim on all usually chromed accessories.

Probably the most familiar customizing feature on Barris automobiles is the lowering of the car. George has devised every conceivable method to give the car a ground-hugging, low look, believing simply that a lower car looks better. The chopped top is practically a Barris trademark; he's certainly done enough of them to earn it. He is one of the first to admit the only real way to lower the car and keep proper proportions in both the upper and lower body areas is to "section" the car. This requires taking out a three-to-four-inch section of metal all around, usually in the widest area of flat metal in the vertical position. This, as you can readily visualize, is quite a task when there are a multitude of angles and contours on nearly every body design. Sectioning, without a doubt, is the costliest of custom modifications. Luckily, Detroit designers have narrowed the depth of the body sides



One of the most beautiful, chauffeur-driven customs to come out of the Barris shop is this Parisienne Cadillac, originally a '54 Eldorado. Bulky mass of the body has been decreased by taking metal out of the side all around ("sectioning"). Length has been increased by extended rear fenders, and the car has been neatly continentalized with the rear tire molded into rear deck. Top is de ville type, half removable.



Barris started out by building customs for himself without any body or fender experience. Luckily, he was taught many tricks of the trade by the late Harry Westergard, an early customizer with considerable talent in his own right. Today, George first sketches his ideas on paper, sometimes making detailed drawings to be sure the end result is what he is after. As evident here, he is able to do the torch work himself.

The Man Who Changes the Face of Detroit

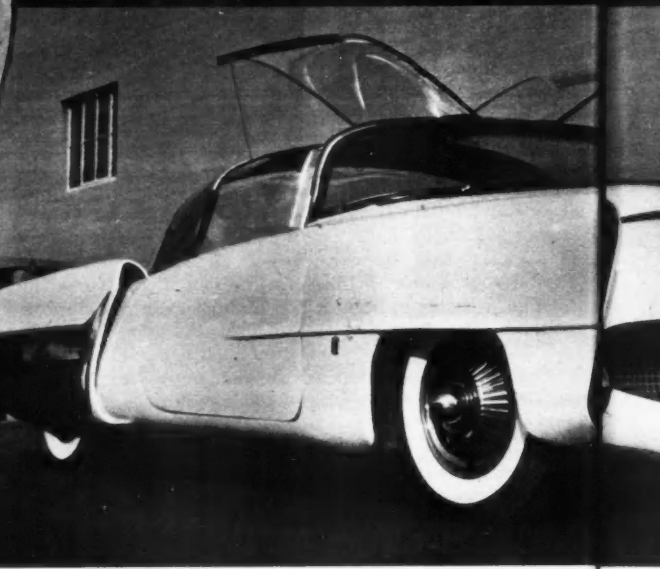


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Photos by George Barris, Jim Potter, Bob D'Olive



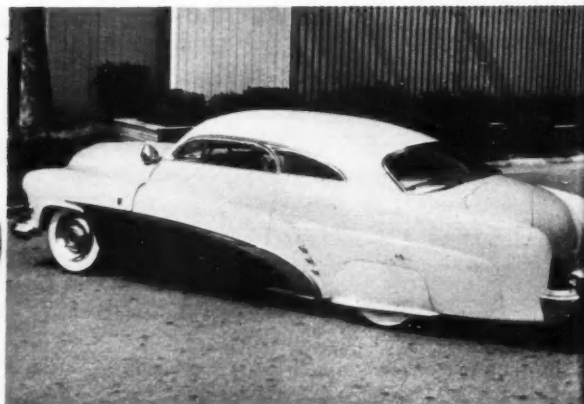
Pickup restyling is a favorite with Barris. On this one he introduces one of the earliest quad headlight designs, developed from small foglights and tractor sealbeams, set in a special handmade chromed shell within molded grille.



on the newer cars so such lowering will soon be unnecessary.

Another Barris innovation which can be recognized as having started a trend is the "floating" grille. Subsequent to this operation performed on a few cars in the early Fifties, manufacturers adopted the idea, with Pontiac and Oldsmobile being notable examples.

Airscoops — in the hood, at the forward section of the rear fender, over the headlights, and in other places — have long been a restyling modification practiced by Barris. So have the not-so-apparent "molding-in" (making one-piece by filling and welding) of all body seams, bumper pans, and the like. On earlier customs, the V-butted windshield, forerunner of



Most familiar customizing feature of Barris is the cut-down or chopped top, such as on this '51 Merc completed in '52. The window frames are curved and separate from the body. Sculpturing is evident in body side panel, airscoop, fender.

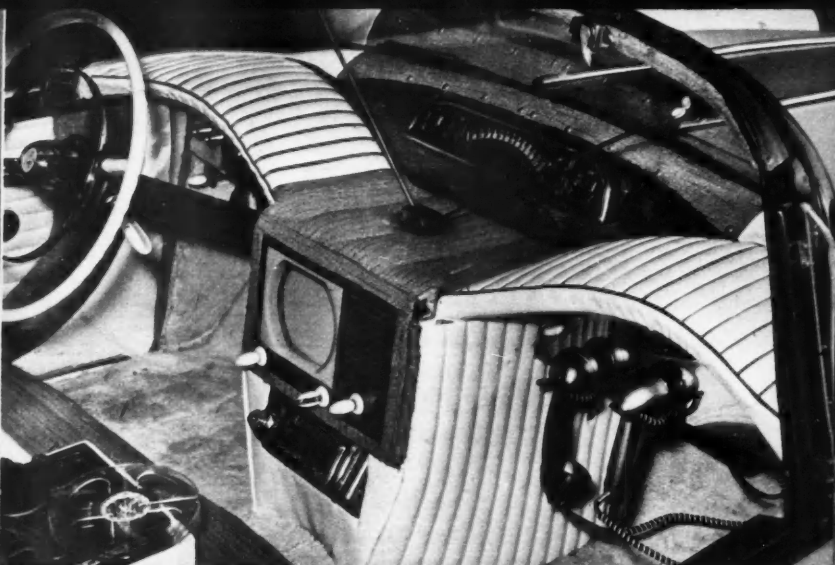
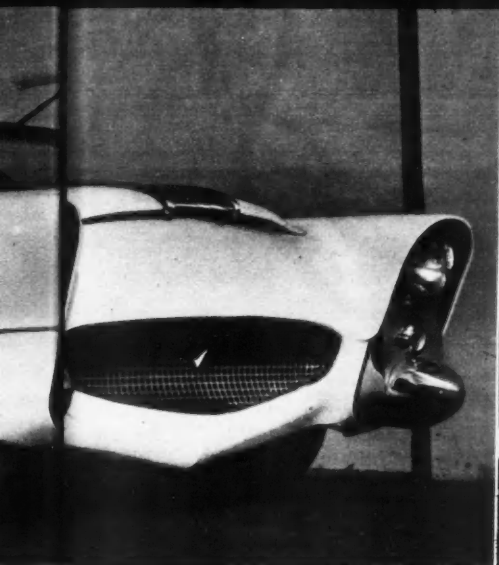
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Considered by George to be his best work, the "Golden Sahara" is the ultimate in futuristic design of a luxury automobile. Completely designed by Barris and built from the ground up, it features bumper bullets that came out

later on Cads, transparent top hinged at center for easy entry, tire molded into rear deck, as on current Imperials. The interior is luxuriously upholstered and equipped with a TV, tape recorder, and a bar with built-in refrigerator.

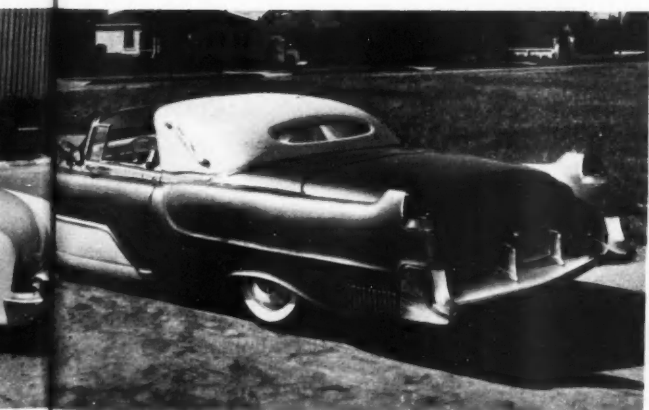


the curved one-piece glass now universally used, was an idea initiated by Barris. Of course, such metal artistry as frenching headlights and tail lights, smoothing off emblems (nosing and decking), and the like are so common today in the customizing field that you can hardly identify Barris or anyone else as the originator; yet these are the modifications most often done by the youthful customizer wherever he may be — in Hoboken or Honolulu.

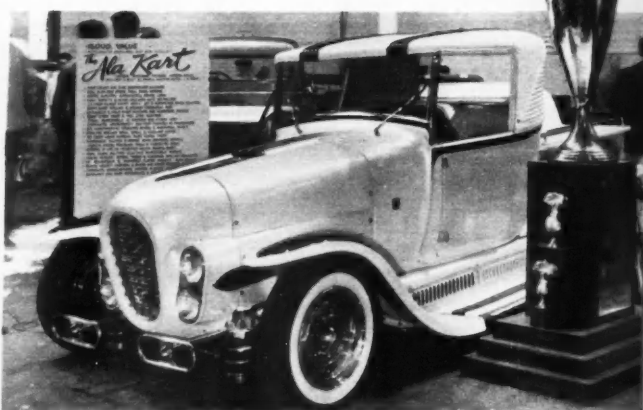
Today, George Barris is the accepted authority in his chosen customizing field. Besides the personal supervision of his extremely busy shop in Lynwood — which he now leaves in the capable hands of his General Manager, Gene

Simmons, while he travels around the country — he appears on a weekly TV show devoted to custom cars. In between, he may be "assisting" in the production of a local car show, giving free advice to other customizers, or busy photographing the customizing efforts of other shops throughout the country.

Only recently married at 31 — after years of a playboy-type bachelor life — perhaps George is thinking of the distant future... when he can hope there'll be another Barris to carry on the family tradition, not in the restaurant business as desired by his own parents, but in his flourishing custom automobile trade.



De ville styling is another design favorite of Barris. This '54 Buick has been transformed into a special Cadillac by using certain Cadillac components, including front and rear fenders, tail lights, bumpers. Note the fadeaway wheel wells.



Built strictly for show purposes but incorporating the very latest in engineering advancements, this futuristic hot rod pickup is one of the latest Barris efforts. The "World's Most Beautiful Roadster" has air suspension and electric brakes.



CITROËN

ID-19

LOWER-PRICED SISTER OF THE DS-19 HAS MUCH SAVOIR FAIRE



ELEVATOR varies ground clearance from 6½ to 11½ inches. Feature is also used to jack the ID for tire change.



EXCEPT FOR MINOR TRIM, the new ID version of the DS-19 Citroën is identical in appearance. All changes have been made on the inside, where the gadget-ridden dash has given way to one more practical and easy to use. The automatic clutch and hydraulic controls have been replaced with an excellent four-speed column shift, pendant clutch pedal; the brake button has been replaced by a normal pedal, and the diameter of the steering wheel has been increased. Otherwise, the ID is just about the same. It still features the sensational oleo suspension which provides fabulous riding qualities. The self-leveling device still hisses, and raises or lowers the front and rear after hard stops and fast starts, but it reacts slightly slower due to the installation of only one pump (two on the DS). The engine is a slightly detuned version of the DS mill as reported in the October '56 MOTOR TREND.

Acceleration is not the ID's forte, and trying to flog it from stoplight to stoplight is a waste of time. While making practice starts for acceleration tests, I discovered that winding the engine and dropping the clutch is just not the way to get a Citroën off the line. The front end jumps up in the air until it reaches the limit of the suspension piston with a teeth-jarring wham . . . the car having moved forward about eight feet! Best times were made by easing off in first, and using the excellent four-speed box to row through gears, peaking in each gear.

The brakes are equal to the ride quality, and — for all practical purposes — are fadeproof. Twenty slowdowns from 60 to 20 mph, plus two abrupt "panic" stops from 60 mph, produced odor but absolutely no fade or grab. The front disc brakes automatically compensate for wear; they are cooled by air forced through channels in the nose of the car. The rear brakes are conventional drums.

Plush, really plush, is about the only way to quickly describe the seating in the Citroën. Dropping into those thick foam rubber pillows is a sensation which must be experienced rather than read about. Like the ID, the two seats in front are adjustable, both for legroom and rake. One or both bolsters can be folded back to form a thick, comfortable bed. Carrying out the theme of plush comfort and safety is the foam rubber floor matting, arm rests, and ceiling liner! A jarring note in all this decor are the window cranks. It takes the strong right arm of a circus Sandow to roll the windows up without turning sideways and putting the shoulder into it.

66-HP FOUR-BANGER is surrounded by spare, disc brakes, front-drive mechanism, and maze of hydraulic components.

ACCELERATION

From Standing Start
0-45 mph 10.4 0-60 mph 19.2
Quarter-mile 21.4 and 62.5 mph

Passing Speeds
30-50 mph 7.8, 45-60 mph 8.9, 50-70 mph 17.8

CRUISING SPEEDS

Maintains constant speed of 50-60 mph easily, higher where legal.

TOP SPEED

87 mph

FUEL CONSUMPTION

Stop-and-Go Driving: 19.7-23 mpg for 198 miles

Highway Driving: 23-27.4 mpg for 325 miles

Overall Average: 22.4 mpg for 523 miles

Fuel used: Mobilgas Special

BRAKING

Withstood 20 slowdowns from 60 mph to 20 mph, plus two "panic" stops from 60 mph. Produced odor, but absolutely no fade or swerve.

SPECIFICATIONS

ENGINE: 4-cyl. in-line ohv. Bore 3.07 in. Stroke 3.94 in. Stroke/bore ratio 1.25:1. Compression ratio 7.5:1. Displacement 116.6 cu. in. (1911cc). Develops 66 bhp @ 4000 rpm. Torque 97.6 lbs.-ft. @ 2500 rpm.

TRANSMISSION: 4-speed column shift, synchro on top 3 gears. Overall ratios 13.8:1, 7.34:1, 4.77:1, 3.31:1. Front-wheel drive.

CHASSIS: Unitized body. All 4 wheels independent. Front suspension—control arms and ball joints. Rear—trailing arms. Self-equalizing oleo system with automatic leveling. 6.50 x 15.75 Michelin X tires. Disc brakes in front, drums at rear. Rack and pinion steering, with 38-ft. turning circle, 4 turns lock-to-lock.

DIMENSIONS: Wheelbase 123 in., overall length 189, overall height 58, overall width 70.5, front tread 59, rear 51.3, weight 2475 lbs. (64% front, 36% rear).

PRICE (port of entry): \$2835.

ACCESSORIES: Radio \$89.

M TEST BY BOB ROLOFSON

The padded interior, combined with the fabulous ride, produces a superb road machine. I started out one morning to make a 175-mile highway gas check on the ID, and arrived home that evening after seven hours of pleasurable touring, with the odometer aged by 325 miles! The car comes alive on the highway, holding an easy cruising speed of from 60 to 70 mph. My route circled over the mountains, through the desert, back into the mountains and through the ski resorts. The ID covered one 48-mile stretch of desert highway at a steady, flat-out indicated 90 miles per hour with no sign of labor or heating, and with the same effortless handling it showed at 60 mph.

On the high desert, I drove through a blinding sandstorm with almost the same ease of handling, while other machines were weaving back and forth with the wind. At one point I took a "short cut" across 38 miles of graded desert road. After 15 or 20 miles of relatively easy going, the road suddenly began looking like a proving ground for tanks, with chuckholes, deep ruts, and piles of loose drifted sand. After slithering and bottoming a few hundred yards, I pulled the Citroën "elevator" lever and literally "paved" the road. With the lever pulled to the top there is a full 11½ inches of ground clearance and this, plus the front-wheel drive, pulled the car through the loose sand at a good clip.

Driving the new Citroën was an adventure in calculated comfort, roadability, and the latest in automotive science. The ID has a built-in personality unlike any other automobile in the world.

/MT



WHEEL CHANGE is accomplished by removing two bolts: one from fender, one from wheel.



Photos by Bob D'Olive

TIGHT, HIGH-SPEED CORNERING IS S-M-O-O-T-H WITH CITROËN'S "HYDROPNEUMATIQUE" SUSPENSION.



Photos by
Bob D'Olive and
Bob Rolofson

WITH AMPLE SEATING ROOM FOR SIX ADULTS, SEATS CAN EASILY BE FOLDED TO SINGLE OR DOUBLE BED

THERE IS NOTHING BACKWARD about the car with the backward "P." If the U.S. distributors can successfully retail the car at the proposed base tag of \$2175 (East Coast) — \$2295 (West), it will be the best dollar-for-dollar buy in four-door sedans — U. S. or foreign.

The four-cylinder, in-line mill features a domed hemispherical combustion chamber with inclined intake and exhaust valves, operated from a single camshaft. This system was pioneered by Peugeot back in 1912, and has been refined to the point where their modern powerplant has gained wild applause for dependability from Paris cab drivers — and that takes some doing!

In traffic the 403 complements its modest 58 horsepower with the agility which goes with a 15½-foot turning circle. Although the engine is extremely flexible, the revs must be kept up to obtain maximum urge in third and (overdrive) fourth gear. The four-speed gearbox is rowed with a solid column-mounted lever, but due to an unorthodox pattern, it takes some practice to zip through the gears. First is up and toward the driver, second is down and away, third is straight back, and fourth is forward and slightly down . . . under second. It is quite a shock to snap a shift from first into second, and suddenly find yourself pooping-out in overdrive!

On the highway, the rock-solid feeling of the Peugeot's construction is immediately apparent. It has the feel of a Jaguar sedan, with all the sedateness of a Mercedes. The suspension is soft (as foreign cars go) without excess; excellent distribution of weight provides amazing stability. With the help of those Michelin X tires, the Peugeot corners like the middle car on a monorail. As a matter of fact, it corners so well that I became suspicious. It felt like one of those machines which sticks like glue up to a certain point, and then breaks tail-first without warning. Unable to "break" the rear end on normal curves, I took the car to an unused section of uncompleted highway which has a wide, banked, sweeping turn. After several successive runs, the Peugeot finally "broke" into an easily controlled nose-to-curb drift at 87 miles per hour!

Interior styling is as neat and simple as the exterior. The dash is uncluttered, with instruments grouped behind the wheel. Foam rubber padding covers the top and bottom edges of the dash, giving the passenger's knees protection in emergency stops. The instrument cluster includes a large speedometer with trip-meter, ammeter (good old-fashioned variety), fuel and water gauges, an electric clock, turn indicator lights, and a rheostat controlling the instrument

lights. In the center is a fresh-air-heater mixing panel, ashtray, and closed glove compartment. The fuse box for the electrical system is under the dash to the left of the steering column, with extra fuses supplied in the tool kit! In the midst of all this orderly design and planning is the ignition switch, which *must* have been an afterthought. It looks like the tumbler system of a front door lock which has been bracketed to the steering column. It locks the steering wheel (a good feature) but it is hard to reach, and as difficult to operate.

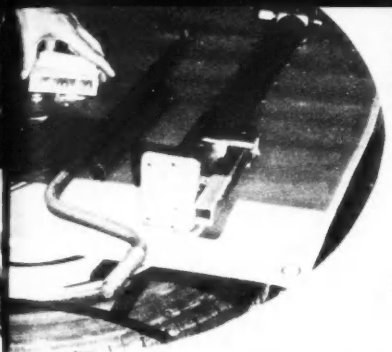
Seating is ample for six people, with a split bench in front and full bench in the rear. They are built for service, with tight upholstery and comfortable padding. By lowering the backs of the front seats and changing the cushions around, the car can be made into a single (for tired navigators), or a full double bed.

Trunk space is fairly large and handy to use, with a spring-loaded lid and clean, uncluttered space. The spare tire and tools are all carried in their own compartment, under the luggage shelf. Capper to this list of included extras is the sunroof, which can be easily operated with one hand, and locked in any position. Just the thing for acquiring a tan on-the way to and from the office! All this at a showroom driveway price of \$2175 - \$2295? *Sacre bleu!* /MT

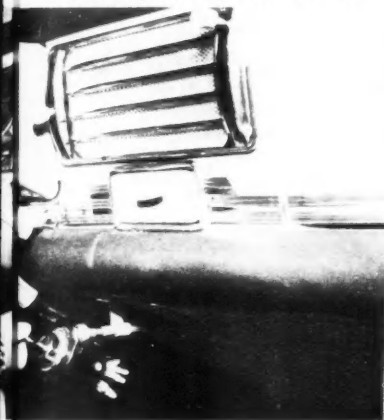
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NEAT TRUNK is compartmented. Ignition switch (below) locks steering wheel, is hard to work.



ONE-HAND SUNROOF operates easily, locks in position.



MT TEST BY BOB ROLOFSON

ACCELERATION

From Standing Start
0-45 mph 12.0 0-60 mph 19.0
Quarter-mile 22.9 and 62.2 mph

Passing Speeds
30-50 mph 9.1, 45-60 mph 9.7
50-70 mph 18.3

CRUISING SPEED

50-60 mph (higher where legal)

TOP SPEED

87 mph

FUEL CONSUMPTION

Stop-and-Go Driving
20-22 mpg for 356 miles

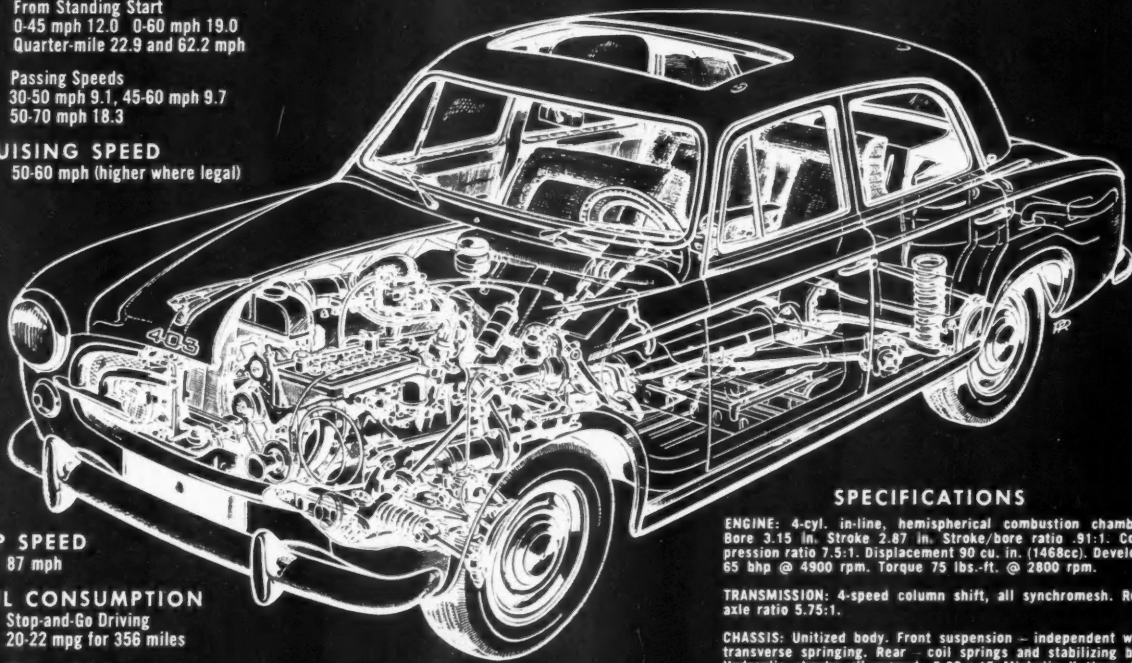
Highway Driving
24-28 mpg for 175 miles

Overall Average
22.8 mpg for 531 miles

Fuel used: Mobilgas Special

BRAKING

Withstood 12 slowdowns from 60 mph to 20 mph before odor was apparent, 16 before slight fade appeared; all-out stop from 60 mph to 0 on 18th run produced straight "hands off" stop with fade.



SPECIFICATIONS

ENGINE: 4-cyl. in-line, hemispherical combustion chamber. Bore 3.15 in. Stroke 2.87 in. Stroke/bore ratio .91:1. Compression ratio 7.5:1. Displacement 90 cu. in. (1468cc). Develops 65 bhp @ 4900 rpm. Torque 75 lbs.-ft. @ 2800 rpm.

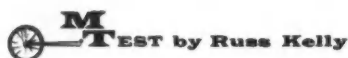
TRANSMISSION: 4-speed column shift, all synchromesh. Rear axle ratio 5.75:1.

CHASSIS: Unitized body. Front suspension — independent with transverse springing. Rear — coil springs and stabilizing bar. Hydraulic shocks all around. 5.90 x 15 Michelin X tires. Hydraulic brakes. Rack and pinion steering, 15½-ft. turning circle, 3¼ turns lock-to-lock.

DIMENSIONS: Wheelbase 106 in., overall length 176, overall height 59, overall width 66, front tread 52.8, rear tread 52. Weight 2322 lbs. (52% front, 48% rear).

PRICE (port of entry): \$2175.

AUSTIN-HEALEY MM



THE ROAD TEST CAR from off which fell — nothing...

Contrary to what you might expect, the road tester does not approach the latest wheeled product offered into his care for testing with a light confident heart. Tight production schedules release new models with nuts and bolts no more than holding hands to keep wheel and chassis together. An innocent rattle is sure to be followed by the metallic sound of some vital part bounding along the asphalt. The patrol car's siren is sure to be followed by a frantic wire-pulling search for tail lights that were, but now have gone you know not where.

In contrast to these conditions, the Austin-Healey Mille Miglia proved to be outstandingly well prepared and dependable. This, added to the fact that it is a most pleasant car to drive, made me reluctant to return the car at the conclusion of the test which added up to several hundred miles of use.

Again, as it has been every year with the Austin-Healey, we were forced to play the English game of "Find the difference over last year's models, if you can." If it hadn't been for rain, we would have missed the fact that on this year's model, the rear half of the plastic window in the side curtain slides forward; on last year's model, the front half slid back.

Although this model externally is basically unchanged from last year's 100-Six, the changes under the hood are instantly

noticeable, either on peeking or pulling out into the traffic.

Output has been increased from 102 bhp at 4600 rpm to 117 bhp at 4750 rpm. Torque has been increased from 142 pounds-feet at 2400 rpm to 147 pounds-feet at 3000 rpm. Although not startling increases on paper, they are satisfactorily evident in performance.

Earlier reports that the MM was capable of a 0 to 60 time of less than nine seconds at first brought doubts because the test car exhibited eager willingness to turn 60 in 10 seconds flat, but not a fraction less. Subsequent investigation revealed that the early MM had a different camshaft and it can be assumed that here is where that elusive second had gone.

Throughout the acceleration tests gear changes were made at 4750 rpm, the recommended maximum. Zero to 45 mph from a standing start consumed a consistent 6.1 seconds. Zero to 60 time, averaged over eight runs, was 10.2 seconds. The standing quarter averaged out at 17 seconds and a speed of 76 mph. Of interest to the highway driver is the fact that the MM in third overdrive takes only 11.2 seconds to accelerate from 50 to 80 mph.

Responsible for this new vigor in what is basically the A-105 Austin Six engine used last year is a new head with improved manifolding.

A cast aluminum log-type intake manifold now replaces the cast-in induction tract of last year's engine. This mates

ACCELERATION

From Standing Start

0-45 mph 6.1 0-60 mph 10.2

Quarter-mile 17 secs. and 76 mph

Passing Speeds

30-50 mph 4.7 45-60 mph 4.8 50-80 mph 11.2

FUEL CONSUMPTION

Highway Driving, 18.3 mpg

Stop-and-Go Driving, 16.9 mpg

Fuel Used, Mobilgas Special

SPECIFICATIONS

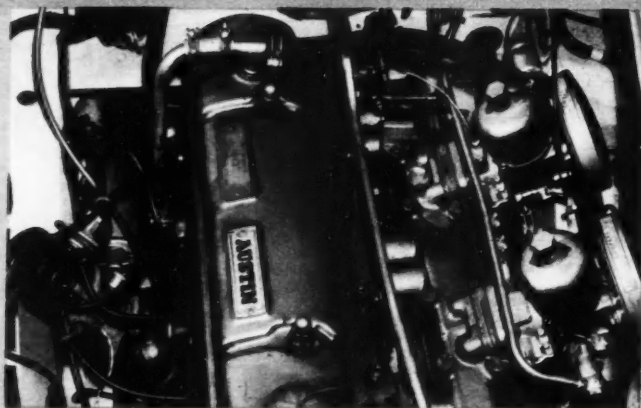
ENGINE—6 cyl. ohv. Bore 3.125 in. Stroke 3.00 in. Stroke/bore ratio .96:1. Compression ratio 8.5:1. Displacement 161 cu. in. Advertised bhp 117 @ 4750 rpm. Max. torque 149 lbs.-ft. @ 3000 rpm.

TRANSMISSION—Dry single-plate clutch, 4 forward speeds, top 3 synchronized, overdrive on 3rd and 4th. Gear ratios: 3.08:1, 1.91:1, 1.33:1, 1:1, overdrive 78:1. Rear axle ratio 4.10:1.

CHASSIS—Front suspension: independent wishbones, coil springs. Rear: semi-elliptic leaf springs. Hydraulic shock absorbers all around. 5.90 x 15 tubeless tires. Girling hydraulic brakes with 2 leading shoe on front. Cam and peg steering with 35-ft. turning circle.

DIMENSIONS—Wheelbase 92.0 in., overall length 157.5 in., overall height 49.0 in., overall width 60.5 in., minimum clearance 5.5 in., front tread 48.8 in., rear tread 50.0 in., weight 2600 lbs.

PRICE (port of entry)—Standard \$2995, Deluxe \$3395



INCREASED HORSEPOWER comes from new head and intake manifold with individual ports, larger carburetors (with their thinner air cleaners) and a higher compression ratio of 8.5 to 1.

MM stands for Mille Miglia but means outstanding performance, lots of fun

up to the new head that boasts six separate intake and six separate exhaust ports, improving breathing over the old siamesed port arrangement.

Larger SU carburetors, now 1¾-inch throat, larger intake and exhaust valves and a compression boost from 8.25 to 8.5 to 1 total the engine changes.

As with last year's 100-Six, the MM has a comfortable, firm ride and for the driver one of the best seating and control layouts extant. One objection to the pedal layout is the awkward space between brake and throttle that makes downshifts difficult. The synchromesh gearbox is a pleasure to use. Visibility with the top down is excellent and adequate with the top up.

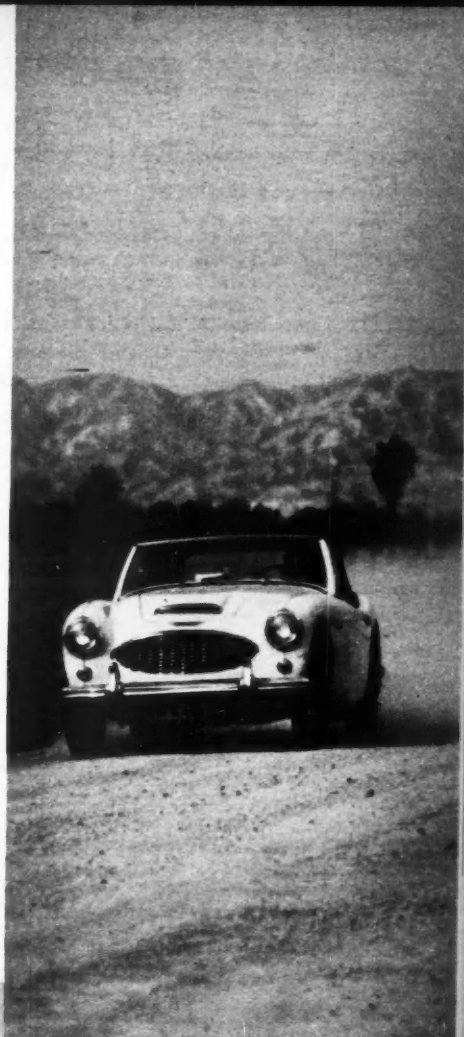
Handling and braking are of a high standard, but at high speeds front wheel tramp can be shattering to the nerves if the front wheels are not perfectly balanced.

The Austin-Healey enjoys a large share of the American sports car market and for good reason. It is compact, good looking, reliable and perhaps best of all, an excellent dollar value. In response to the demand from many people who don't like a four-seater's impractical use of interior space, a two-seater will also be offered.

Although only the MM engine is available in '58, there are two distinct models. One, the standard model, comes equipped with disc wheels and has a tonneau cover and heater as the only available extras. The deluxe model as tested delivers with wire wheels, direction signals, telescopic steering column, tonneau cover, overdrive and heater. This deluxe model delivers with wire wheels direction signals, telescopic steering column, tonneau cover, overdrive and heater. This deluxe model delivers on the West Coast for \$3395 before tax and license; the standard model for \$400 less.

/MT

Photos by Ross Kelly



LUGGAGE SPACE is definitely limited. A small overnight bag and a few incidental parcels are all that will fit. Many owners use Val-a-Pak type folding garment bags.



SEATING POSITION is excellent. The driver's relation to the handbrake, the shift lever and the steering wheel gives excellent control and means comfortable racing or touring.



TYPICAL SCENES THROUGH THE WINDSHIELD OF A RENAULT DAUPHINE: A QUIET VILLAGE (ABOVE), SMOOTH TWO-LANE COUNTRY ROAD WITH GOOD MARKINGS (LEFT, BELOW), AND ON THE SIX-LANE AUTOROUTE (EXPRESSWAY) OUT OF PARIS (RIGHT, BELOW).



FINAL INSPECTION AT END OF LINE IN STATE-OWNED RENAULT FACTORY, ONE OF THE WORLD'S MOST HIGHLY AUTOMATED PLANTS.



FRANCE

Dazed by Paris' madcap traffic circuit; amazed by the automation in the Renault factory

DRIVING CONDITIONS in Paris are pretty much like they are in other crowded cities of the world—New York, London, Los Angeles—where they have what seems to be two cars for every space where only one can fit. And so during rush hour, you sit, and smoke a cigarette, and look at your watch, and move a few feet, and get impatient, and never quite learn to accept it the way the Frenchmen do. You can't even let off steam by blowing your horn—that's forbidden.

Yet it seems as if the Frenchman behind the wheel neither gives, nor asks any quarter. If he can outbluff you in a tight spot, he will. It's a sort of a game—he who bluffs best, wins. This was forcefully brought home by a wild Citroën DS-19 cab ride from one end of Paris to the other. Naturally, the quickest way was by the very wide and very famous Champs Élysées.

At the two ends of this street are two circles that from the air make it take on the shape of a huge dumbbell. These circles are also the hub of a rimless wheel with streets radiating out like spokes. When you add hundreds of cars you have a massive centrifuge that engulfs and disgorges vehicles in all directions at incredible speed.

Our cab driver charged into this maze with absolutely no compunction. To the right he didn't even look; to the left he elbowed his way across the traffic trying to move circularly. As he got to the other side of the Arc de Triomphe, he no longer looked to his left, but bluffed his way in a series of near-misses and bruised egos in a tangent to the entrance of the Champs Élysées. (He suavely avoided the right-of-way rule: yield to the car on your right.)

A wild, screaming ride down the wide avenue, passing to right and left, a similar cut-and-dart maneuver around the Place de la Concorde, then storming down side streets to arrive at our destination "all shook up." This was our baptism in Paris traffic; nothing could hurt after this!

On the whole, though, most Parisians don't drive the way this cab driver did; they do the same things, but somewhat slower. Once you get to the Autoroutes (the exits from the city) you find the speeds pick up. On these six-lane divided highways (which compare to our expressways or turnpikes) you can travel as fast as road conditions permit until you see a posted speed limit. You'll find that most drivers are pushing their cars to the utmost. Soon I found myself in the swing of things, pushing the Renault Dauphine through the gears, around corners, and through traffic as fast as it could go.

Of the visits to the factories of France, the trip through two plants of the state-subsidized Regie Renault was the most surprising. I had figured they must have quite an operation to produce 1500 cars a day (900 of them Dauphines), but wasn't prepared for what I saw. It's been said that it is the most highly automated factory in the world, and I wouldn't argue the point.

The visit was apparently planned to impress us, starting out in the foundry, which in assembly-line fashion produces 1900 engine blocks per day. From the foundry the blocks go onto rotary milling machines, then later to a two-man-operated machine that drills and taps all head and crankcase holes, and the cylinder bores for the wet sleeves. In all, these Renault-made machines have 110 operations. This was impressive enough, but next we saw a more modern version of same that is a combination of 22 machines, each performing 25 operations, or a total of 550 operations!

Then, the French being what they are, pointed out the women operating the overhead cranes, and the fact that the sand that is not re-usable in engine foundry work ends up in bricks—which they also make.

Engine assembly is fairly routine, using a conveyor system, with the workmen adding parts as the basic block moves by. A certain number of these are given 1000-hour tests; all others are given a 17-minute inspection that is performed from the time the engine reaches a revolving conveyor test stand, is hooked up, run in, and checked for operation.

Automation in body assembly is a fine art; so was the way in which the spot-welding techniques were pointed out to us. As the frame and body traveled along together, we were first shown a machine that welded 30 points at a time. Then 34, then 68, then 84, and finally 116! You wouldn't think that a Renault Dauphine had so many weld points.

Painting, of course, was automatic, followed by a hand rub-down. After painting and after the insides are added, all the cars are driven off the ends of the assembly lines around their test track. Points they check are acceleration, braking, and roadholding.

Still, in many ways, France is a paradox; in her cars it is especially so. Once the proud producer of massive, well-built, and powerful cars like Bugatti, Delage, and Delahaye, these have practically disappeared from its streets and highways. There is now a movement afoot to hold these cars within French borders as *objets d'art*; yet the high cost of their operation and the hunger for dollars is allowing them to sift through to this country. Yet the French appear to have an absorbing interest in cars; the Paris Salon annually draws close to one million people in the period of one week.

Everywhere you go you see an increasing number of scooters and minicars, no doubt largely due to the same reason you see them everywhere in Europe: "gold-tinted" gasoline (99 cents per gallon), and exorbitant taxes. The more powerful the car, the more gas it's going to use and the higher the taxes imposed. A Simca Vedette, costing 995,000 francs (\$2369) has a tax horsepower rating of 13, making it subject to a super-luxury tax of 15,000 francs (\$36) per year which is on top of a first-year registration fee of \$37. This isn't bad, but if that same car had a slightly larger engine, taking it up to a 15-horsepower rating, the luxury tax would then jump to \$238 per year! Imagine the plight of the cab drivers then, and how much money the "poor people of Paris" need to drive any large or powerful car.

Though I had been told there were still many taxicabs that had been used by Marshal Foch in his triumphal defense of Paris during the darkest days of the first World War, I looked in vain. Every other type was in evidence: new and used Renaults, Citroëns, Dyna Panhards, Peugeotots, and Simcas, with the first three being the most dominant.

As always, the recounting of such a visit is hardly complete without mentioning matters not concerning cars. For example, you bachelors will be happy to know that there are probably more beautiful women strolling the walks along the Champs Élysées than anywhere in the world. Night life there is aplenty. Food is galore, what with eight to 10 courses and several wines served—even at lunch. After a week of this, you can imagine how quickly I devoured the hot dog I was served at the lunch counter atop the Eiffel Tower—even if it was served in a French (what else!) roll. /MT



NEW DEVICE THROUGH

Perfect Circle Valve

Seals solve problem common to

Do you ever wonder why an engine continues to burn oil even after an apparently competent overhaul job—complete with new rings?

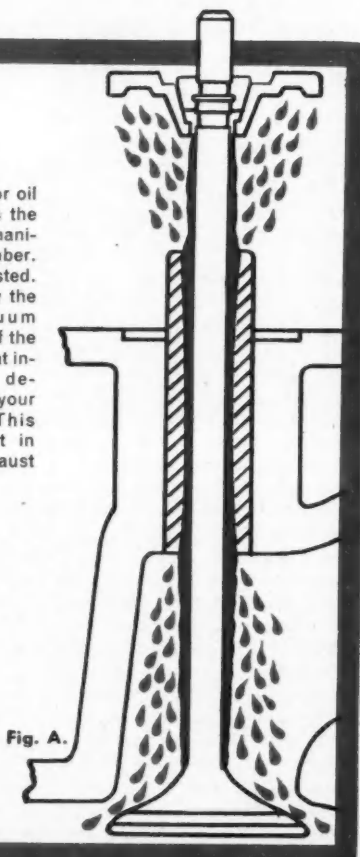
The answer may be found in oil loss through the *valve guides*. As you know, automotive engineers turned to OHV design in their quest for higher and higher horsepower even though it was known that a penalty might have to be paid in the form of oil loss through valve guides.

That disadvantage of OHV design became more serious year after year as compression ratios soared and as "deceleration vacuum" became more of a factor. In fact, quite often with worn overhead valve engines more oil is lost through the valve guides than past the pistons. The nature of this problem is clearly shown in Figure A.

Today there is a simple, positive solution to the problem—Perfect Circle Valve Seals. See Figure B. Developed by Perfect Circle engineers after years of research and testing, PC Valve Seals are easy to install and are low in cost. They are now available for popular makes of cars.

THE PROBLEM

See how globules of motor oil are being sucked through the valve guides and into the manifold and combustion chamber. Motor oil is burned up—wasted. This oil loss is caused by the normal operating vacuum created at the lower end of the valve guides... vacuum that increases sharply during deceleration when you take your foot off the gas pedal. This vacuum effect is present in both the intake and the exhaust manifolds.



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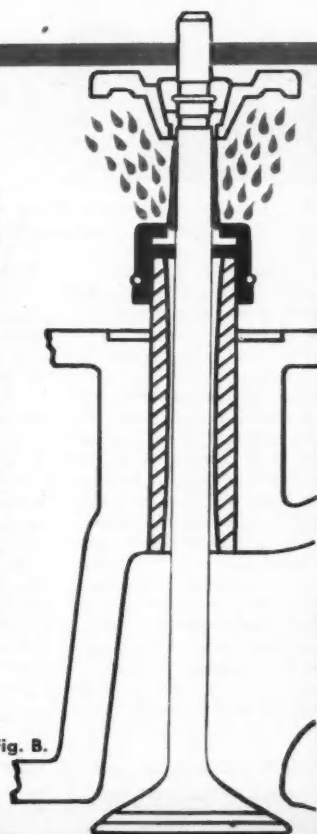
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to high-compression, overhead valve engines

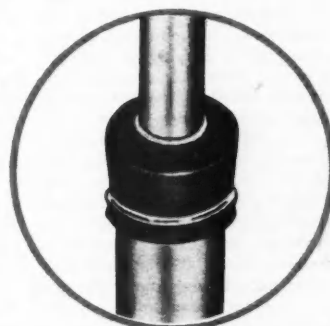
THE SOLUTION

Here's the same overhead valve as shown in Fig. A—but with the new Perfect Circle Valve Seal installed. Note the absence of oil leakage through the valve guide. This is because the Teflon oil control ring works very much like a piston ring. It keeps the atmospheric pressure and oil in the rocker arm chamber from equalizing with the vacuum in the manifold. The contracting force of the ring on the valve stem prevents passage of air or oil between the stem and the guide. At the same time, this action distributes and deposits a very thin film of lubricant on the valve stem—increasing the life of both valve stems and valve guides.

Fig. B.



When you grind valves or overhaul ... install PC Valve Seals and be sure of lasting oil economy!



PC Valve Seals adjust to valve stems of a wide range of diameters and therefore accommodate a wide range of stem-to-guide clearances. Because of this, PC Valve Seals can control severe cases of oil loss through valve guides. They often save valve guide replacement or reaming and replacement with oversize-stem valves. Easy to install ... the only special tool that may be required is a valve guide cutting tool. PC Valve Seals come packaged in sets in a handy reusable plastic box...complete with installation instructions.

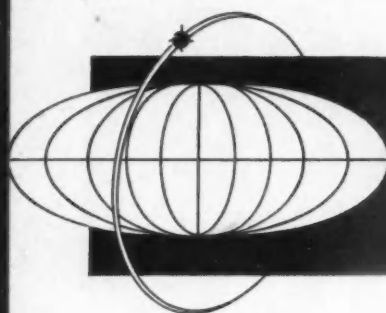
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MOTOR TREND/AUGUST 1958 53



AROUND THE WORLD IN THIRTY DAYS

Business outlook for British and European car builders is good....English upset Italians in Grand Prix racing....

by Gordon Wilkins *European Editor*

OPTIMISM IS THE KEYNOTE in the European auto industry generally. Both the British and the Germans, among others, are happily producing and selling cars as fast as assembly lines can turn them out and ships will carry them abroad. Sir William Rootes, of England's important Rootes Group, reports that British industry is expanding with all plants busy. He says that there is no recession in Great Britain. With the shipping bottleneck ended, British auto exports for a recent three-month period are above \$1.5 million worldwide. Sir William foresees a continued large volume of sales for bigger U.S. cars while demand for the smaller imports will continue to grow steadily.

Daimler-Benz, whose distribution arrangement with Studebaker-Packard has just passed its first birthday, has never found the export business as profitable as it is today. Approximately one-half of their production is for home consumption with the balance spread over the world.

Until this year, Sweden was their biggest export market (12,000 units annually) but it appears that U.S. customers will take over as the dominant buyers in 1958. During the whole of 1956 about 3000 Mercedes-Benz cars were sold in the U.S. Compare this to average sales of over 1000 per month for 1958 and it is easy to understand the upbeat outlook of Mercedes executives.

In a dramatic demonstration of how good business is, M-B staged a huge weekend drive-away of new cars from Las Vegas in June. They delivered 137 Mercedes—mostly 190-SLs—valued at more than \$1 million to customers and dealers from 29 states, the largest such imported car event ever held in the U.S.

Prosperity means expanding free trade among all. More and more American firms



ABARTH-FIAT 750 roadster is being built by Allemano especially for United States consumption. Beautifully designed little car is said to do 90 mph.

are establishing overseas headquarters for export, proving that the automobile business is a two-way street; no country can stand alone.

BRITAIN

Grand Prix racing this year has produced a situation without precedent for the English fans and race car builders. A series of wins against the Italians, long-time masters of the Grand Prix game, has vindicated the backers of Vanwall, BRM, Lotus and Cooper Grand Prix cars. The first three World Championship events of 1958 have proven that what might have been a fluke is not.

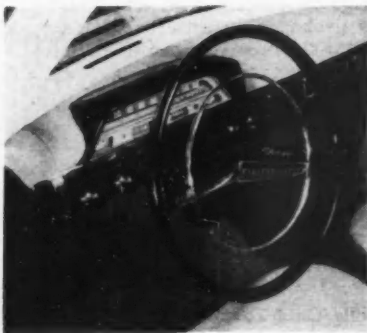
Stirling Moss won a dramatic and unexpected victory in the Argentine Grand Prix in a tiny Rob Walker-owned Cooper-Climax which gave away nearly 100 horsepower to its most potent rivals. Next, Maurice Trintignant proceeded to hammer home the lesson at Monaco in another Cooper from the same private stable.

Eight days later, Moss emerged victorious from the Dutch Grand Prix at Zandvoort in a Vanwall. This time he led a string of British cars which took second, third, fourth, sixth, eighth and ninth places, including BRMs, Coopers and a Lotus. Of course, the tide could swing. Maserati has a new Formula 1 car and Ferrari is frantically attempting to correct the problems which have kept his machines out of the winner's circle. But at this point, the picture looks brighter for England's racing prestige than it has in many years.

Motor racing enthusiasts and his fellow drivers feel a sense of deep personal loss at the death of Archie Scott-Brown, killed in a sports car race at Spa. He was driving a Lister-Jaguar, the make which owes its worldwide popularity entirely to the successes it achieved in recent years at his hands.

Archie was often inaccurately referred to as a one-armed driver. In fact he was born

VOLVO AMAZON HAS CLEAN DESIGN, REMINISCENT OF AERO WILLYS. PRODUCTION—350 PER WEEK—IS RESTRICTED TO HOME MARKETS.



Report on India's automobile industry....Italian auto production up 26.4 per cent over 1957....Allemano building special Abarth-Fiat 750 roadster for U.S....Ferrari goes all-out to field Grand Prix winners....Maserati has new Formula I car....Volve announces four-speed all-synchro gearbox

with a short right arm and an unformed hand, but overcame the handicap so effectively that he played cricket, tennis, football, golf and billiards before turning to motor racing.

Foreign race organizers continually refused his entry because of the handicap but in England he managed to break the unlimited sports car record either during the race or in practice on every course at which he appeared.

He was a works driver for Elva, the Connaught team leader and BRM had attempted to hire him. His tiny figure with the charming smile and big R.A.F. mustache will be sadly missed.

Because copies of this issue will reach subscribers through the mail before release date, we have had to omit one of the month's most interesting sports car news items. But by the time this issue hits the newsstands, news should be out about an addition to the MG line with exciting extra performance and impressive new stopping power.

Rootes is stepping up station wagon production. A new Humber wagon will be out shortly for '59 to be handled by Rootes dealers in the U.S., as will the entire Humber line. This marks the first time that all the Humber cars have been sold here.

GERMANY

Borgward, whose sports car racing program has been an on-again off-again affair over the past few years, wheeled out their Hansa 1500-RS at the recent Nurburgring sports car race. Although both entries failed to finish—one had clutch troubles, the other broke a rear axle—Hans Hermann set the second fastest lap in practice. His rapid under 10 minutes was beaten only by Jean Behra in the RSK Porsche. The Borgward's four-cylinder 1.5-liter engine features direct Bosch fuel injection and develops a healthy 155

bhp. It would be interesting to see more of this car which could provide fierce competition for Porsche.

INDIA

Although confined to the home market and without any genuine ideas or models, nevertheless India's auto production is attracting widespread attention. Backed by India's steel industry, it is Asia's second largest after Japan. There is a huge population whose members would like to become motorized but price is the greatest bottleneck. Car prices start at 10,600 rupees (\$2500) and range to 25,000 rupees (\$5500). The same models produced in England or the U.S. sell for about 35 to 40 per cent of these prices.

The high prices are most peculiar when Indian wages, equal to one-twentieth an American car worker's, are considered. On the other hand, the Indian laborer works effectively for about two or three hours out of eight, spending the balance of the time drinking milked tea, chatting and strolling about. In addition, labor unions are constantly pressuring companies to add more help while taxes on imported parts run to 75 per cent of the value.

The Tata-Mercedes-Benz factory in Jamshedpur is one of the most efficient. With 3000 workers, the plant currently produces 500 truck and bus chassis monthly. Output will double this October when production begins on the diesel engine, now imported from Germany.

Near Calcutta, the Hindustan plant has been in operation since 1947, turning out a variety of machines. Included in the production are the Hindustan 14 and 10—a small Austin—the Morris Oxford, the Traveler station wagon, Morris Minor, and a few six-cylinder Studebakers. Since it appears unlikely that the Studebaker license will be renewed, production will soon be halted although they are very popular as taxis.

Standard-Triumph maintains an assembly



BORGWARD 1500 RS with Hermann set rapid Nurburgring practice lap.

plant at Madras where 1500 Vanguards have been built while the Mahindra Co. produces Willys Jeeps under the Mahindra name. Bombay finds Premiere Automobiles producing Fiat, Dodge sedans, trucks and busses.

Generally, Indian service facilities are bad. In spite of the difficulties, all the factory officials show great determination and are determined to boost this year's 30,000 unit production to 60,000 by the end of 1960.

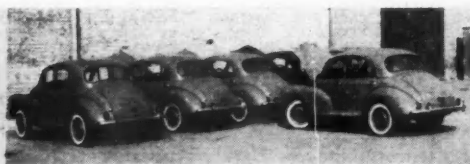
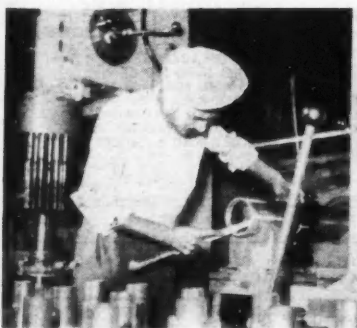
ITALY

For the first quarter of 1958, Italian auto production is up 26.4 per cent over the comparable '57 period. Export now totals 37.5 per cent of production, or 37,403 vehicles shipped, a new record. Of these, 35,550 were passenger cars.

Fiat is building a few hundred special Gran Turismo versions of their nimble little 500 coupe especially for competition work. First time out in a race for "babies" up to 600cc at the Hockenheim Ring in Germany, they won their class. The body has a hardtop instead of cloth and a two-tone color scheme

continued on page 60

MARIANNE THAL PHOTOS



PRODUCTION workers at the Hindustan factory near Calcutta have modern equipment, are efficient, but work very slowly. Plant produces Morris Minors among others. India's unskilled hand labor is still much cheaper than machines for same job.



TARUFFI'S FINAL TRIUMPH

continued from page 34

Taruffi now had a young and attractive wife who wanted him to give up racing. The Mille Miglia, however, obsessed him as the one supremely difficult race to win and drew him as Everest draws the mountaineer. Age was against him, but he had extraordinary physical fitness, iron determination and a sound knowledge of the course to help him. When Ferrari agreed to give him one of the latest V-12 machines with engines increased from 3900 to 4023cc to produce about 400 horsepower, he felt he had a real chance.

The opposition, too, looked strong.

With him on the Ferrari team were Peter Collins and de Portago in similar machines and von Trips in a 380-hp, 3728cc Sebring machine. Against them were Stirling Moss and Behra on two of the vast 4500cc V8 Maseratis, giving well over 400 hp, together with Scarlatti on a three-liter six-cylinder Maserati, and Hermann on an experimental V-12 three-liter car. Among the foreign challengers was Ron Flockhart on a 3.8-liter Jaguar, which had already shown its value at Le Mans.

The two top British drivers had expert navigators in Jenkinson (with Moss) and Klemantaski (with Collins), each armed with 30-foot rolls of paper giving details of every corner on the route, the signs by which it could be identified, the gear to use and the maximum speed at which it could be taken. Taruffi was driving alone because he preferred it, but he agrees you need a very good memory to get away with it. He did not spend much time re-learning the course. "I don't believe in going 'round among the ordinary traffic; motoring at these speeds teaches you nothing." But he did do one complete run around the course for the first time, taking his wife as passenger in one of the race cars. They did it in two sections, starting each time at dawn to be able to motor at racing speeds before the usual bicycles, haycarts and farm animals began to stray onto the roads.

Taruffi knew he could not hope to memorize every corner, so he concentrated on learning what he calls the "key corners." These are the ones just before a long straight, and it is vital to take these as fast as possible so as to gain time on the subsequent straight. "Wherever we found a straight I would turn around and learn the approaches to it."

Just before the race one of the main threats was removed when Behra crashed during a practice run. Soon after the start the second of the big Maseratis was eliminated when Stirling Moss's brake pedal broke. From then on the Ferrari team had things pretty well their own way. Collins had been designated as pacemaker, and Ferrari had promised him a 250 G.T. Ferrari it he succeeded in breaking the course record set by Stirling Moss on the Mercedes in 1955.

The big cars start at minute intervals, and the tail-enders have an advantage in that they can get quick reports at refueling stops on the progress of the cars in front. Once Moss was out, Taruffi was running last, which was fine except that if he were delayed for only a minute or two at any point, the crowd would flow over the road and his

race would be over—with possible disaster.

At Ravenna—188 miles from the start—von Trips, who had started three minutes ahead of Taruffi, was making best time at an average of 116.04 mph. Collins was second and Taruffi third. At Pescara, after 391 miles, it was Collins first and Taruffi second, with a margin of only 53 seconds between them. Then trouble struck at Taruffi once more; his shock absorbers were weakening, but he dared not risk being cut off from the race and fought on to Aquila, still second after 453 miles. Over the Apennines to Rome he kept the sliding car on the road, and was still second at half distance. Collins had now increased his lead to 5 minutes 27 seconds and was all set to demolish Moss's record.

At Florence, 727 miles from the start, Moss's record was broken by minutes, with an average of 98.4 mph to the credit of the flying Collins. The Britisher's lead was now 8½ minutes, but still Taruffi kept grimly on.

Now the going was tougher, for the rain came down on the two difficult passes, the Futa and the Raticosa, as the route wound back over the Apennines, and once again the old bogey, transmission trouble, struck at the Ferrari team. "With a sinking heart," says Taruffi, "I heard a grinding noise begin in the differential. I knew that its chances of lasting the distance were small. At Bologna 794 miles from the start, Collins had a 10 minute 43 second lead. Knowing that rear axle failure at 160 mph could cause disaster to myself and others, I was ready to retire." But Ferrari, who knew that Collins too was in trouble, urged him on. When he pulled away, holding his breath as he nursed the transmission through the initial acceleration, he heard the loudspeakers announcing the imminent arrival of von Trips in the Ferrari.

From now on it was a grim struggle to finish, with hopes of victory once more dashed. Taruffi no longer dared to change gear for fear the shock might break up what remained of his groaning differential. It was top gear all the way, with the nerve-racking knowledge that total failure might come at any second as he screamed along those long straight roads through Mantua to the finish at 170 mph. Then he spotted a small dot in his mirror which rapidly became larger as von Trips overhauled him. He was resigned to the fact that somewhere out in front Collins was winning, but quick mental arithmetic showed that von Trips could still pass Taruffi to take second place. He would have to make up three minutes, because he had started three minutes before Taruffi. Piero knew that the German might just do it if once he let him out of his sight. Above all, von Trips must not know that Taruffi's car was ailing. It was the moment for a supreme bluff. Trips came past and Taruffi tailed him as closely as he could for some miles until they came to a winding stretch which Taruffi knew well. With a tremendous show of confidence he swept past the German on a fast bend, praying that the howling differential would not let him down. It worked. Trips took the hint, decided to settle for a well-earned third place, and they roared on to Brescia together to cross

continued

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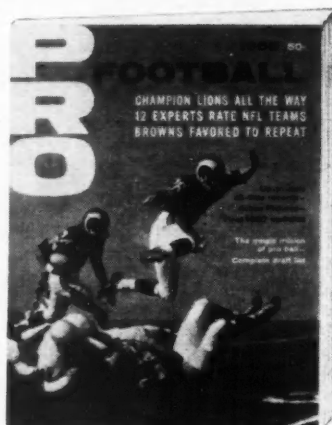
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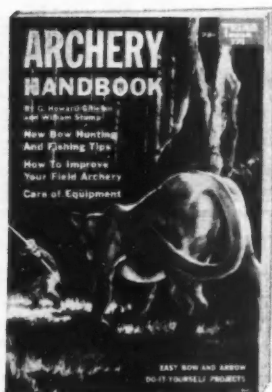
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4 WAGONS

continued from page 30

All four wagons cruise nicely at any speed. The excellent insulation between the engine and passenger compartments in the Rambler and Olds is so effective in preventing engine noise from reaching the passengers that their driver has a tendency to continually pick up speed. Engine noise is quite noticeable in the DeSoto and Ford, making it easier for the driver to subconsciously drive at a more constant pace.

The Rambler is definitely lacking in low speed acceleration. It doesn't start to pull well until it has reached a speed of approximately 45 mph. At speeds greater than this it accelerates quite well. The Ford and Olds have good throttle response and acceleration at low speeds; the DeSoto is third in line ahead of the Rambler.

Fuel consumption averages on the 525-mile trip (using Mobilgas Special) are as follows: Ford, 15.7 mpg; Rambler, 15.3; DeSoto, 14.4; and Oldsmobile, 12.7. The test route included winding mountain roads, desert roads at below-sea-level altitudes, and headwind and tailwind conditions. Most of the driving was done at comparatively high speeds, not truly representative of usual cross-country touring; more normal driving should show better mileage.

Within its limitations, any wagon represented by those taken on the trek is probably a good buy. It's up to the prospective purchaser to decide what he wants and needs and which wagon he, in partnership with the local bank, will take home. /MT

TARUFFI

continued from page 57

the finish line only a few feet apart. Incredulous, a tired Taruffi climbed wearily out of the car, to learn that he had won!

"Only when I had got out of the car and was surrounded by photographers did I know that I had won and von Trips was second. Peter Collins's transmission had finally broken up, and he was out of the race. He had pulled the car off the road, so I didn't see it as I went past."

So tenacity, courage, physical endurance and superb skill in nursing an ailing car had won for Taruffi his life's ambition, and he could now retire from racing. But his joy was short-lived. Even as the photographers' lamps flashed like summer lightning all around him, word came through from Giudizzolo that de Portago's Ferrari, lying third, about 35 miles from the finish, had veered off the road at 180 mph, cutting to pieces the spectators who were pressing forward to watch it pass, and then somersaulted into a ditch. De Portago, his passenger Eddie Nelson and nine spectators, including five children, were killed.

Never again could 400-horsepower machines be launched at 180 mph down public highways thickly crowded with carefree spectators oblivious of the dangers. It was the pinnacle of Taruffi's achievement, but it was also the end of an epoch. /MT

Who said lady drivers aren't as good as men? . . .

Meet Nicky Griffen

driver in the Mobilgas Economy Run!



Nicky Griffen works full time as a switchboard operator in Dearborn, Mich.

**Driving a 1958 Continental—
she averaged 17.96 miles
per gallon for 1883 rugged
miles using Mobilgas Special
High Energy Gallons!**



Informed of her mileage at the end of the 4½ day Run, Nicky shows her delight. The United States Auto Club supervised the Run.

This fair lady's performance in the 1958 Mobilgas Economy Run shoots another big hole in the argument that men are better drivers than women. Driving a Continental in crowded city traffic and along highways, over freezing mountain passes and burning desert roads, she averaged 17.96 miles per gallon using Mobilgas Special high energy gallons!

On your next trip, why not follow the example of the Economy Run drivers to improve your gas mileage? Keep your car in top shape—drive carefully and use Mobilgas Special. Its high energy means top power—top miles per gallon! Ask for Mobilgas Special high energy gallons at your friendly Mobil dealer's.



Nicky crosses the finish line after completing 1883-mile Run from Los Angeles to Galveston.

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AROUND THE WORLD IN THIRTY DAYS

continued from page 55

is standard. The engine is modified with bigger valves to give 21 bhp against a normal 13 horses. Maximum speed is 72 to 75 mph and the price in Italy is a modest \$1000.

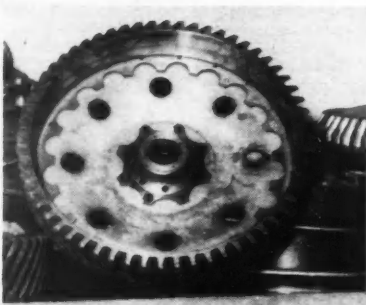
Allemano is now building a series of Abarth-Fiat 750 roadsters, first of which has already been shipped to the United States. The sleekly designed little car is said to do 90 mph.

Enzo Ferrari is making an all-out effort to put his Grand Prix cars back into serious contention. The performance of the little Coopers has set him wondering about the advantages of lightweight construction and simpler design. But when asked if he felt that this was his course of action, he replied that it will be simpler and cheaper for him to increase horsepower.

"We are now getting 120 bhp per liter and the limit is not in sight," he said. Nor does he feel that fuel injection is essential.

"If all engines had started with fuel injection, someone would have invented the carburetor and we should have hailed it as a great simplification. I think there is a lot of development work left in the carburetor," he said.

Ferrari still maintains that his drum brakes are adequate although he has been experimenting with Dunlop discs on a 250-GT chassis. His latest drum has the working

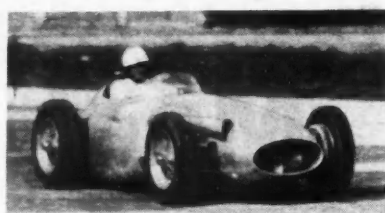


FERRARI'S newest brake has rubbing surface and turbo fins of cast iron.

surface and fins of cast iron copper-riveted to a backing plate of magnesium alloy. Former practice was a light alloy drum with iron liner but there is always the danger that the liner may loosen.

One of his most serious problems with the Grand Prix and V6 sports cars is road-holding and the solution figures high in the current development program.

After their serious financial difficulties, Maserati has come up with a late-season Formula I car. Smaller and lighter than the current car, it uses the same six-cylinder 2500cc engine with a new five-speed gearbox. Horsepower is up from 250 to 270 on gasoline, and weight has been cut by nearly 200 pounds. First tests on the Modena Autodrome were extremely encouraging and the car could be a contender for the last part of the Grand Prix season.



PROTOTYPE of Maserati's new Formula I car laps Modena Autodrome in tests.

RUSSIA

Reports from Russia indicate that the Soviet vehicle production program will include five models for the 1959 to 1965 period. Unlike "decadent capitalist countries," the Soviets admit no competition so that there is no model duplication. But the customer has freedom of choice; he can take it or leave it, as he desires.

Smallest in the range is four-seater 750cc runabout. Next comes the modernized Moskvitch with 1358cc and 43 bhp and the Volga with four cylinders, 2445cc and 74 bhp. The Zim, a seven-seater with a 3480cc, six-cylinder engine of 90 bhp is for middle-grade officials; for the big wheels there is the gaudy new Zil with a V8 engine of 4250cc giving 200 horsepower.

SWEDEN

Volvo is now available with a completely synchronized, four-speed transmission as a no-extra-cost option. Horsepower (85) and top speed (95) remain unchanged and the three-speed box will continue to be marketed.

At first restricted to the home market until service problems were solved, the Volvo Amazon (current production about 350 units per week) is now being exported to Switzerland, Belgium, Norway and Denmark. The first two countries take it with the 85-hp engine used in the PV-444 model for the U.S.

The proposed Volvo sports roadster with plastic body has been abandoned; the chassis was too heavy and production costs were too high.

Lines of the four-door Amazon are slightly reminiscent of the Aero Willys, but it is not as easy to see the right front or rear fenders. Designated a four-seater, it can easily hold five with ample head- and legroom. Seats are comfortably shaped, interior is well finished and trunk is good-sized.

On our test car there was a phase of vibration at about 60 mph which seemed due to the engine mounting, but beyond this the car accelerated smoothly to an indicated 80.

In Switzerland we had a chance to try the Volvo Amazon "S", which up to that time was being carefully concealed from Swedish motorists. Externally identical with the standard Amazon sedan, the "S" is a real dad character automobile carrying on the tradition established by the 85-hp PV-444. It has the two-carburetor engine with 8.2 to 1 compression, giving 85 bhp at 5500 rpm. Drive is through a new four-speed synchromesh gearbox—now also being offered on the PV-444. The new gearbox is excellent, allowing downshifts from second to first at 25 mph without a sound. The speedometer indicated tops of 31 mph in first, 53 in second, 75 in third, and 93 in fourth. /MT



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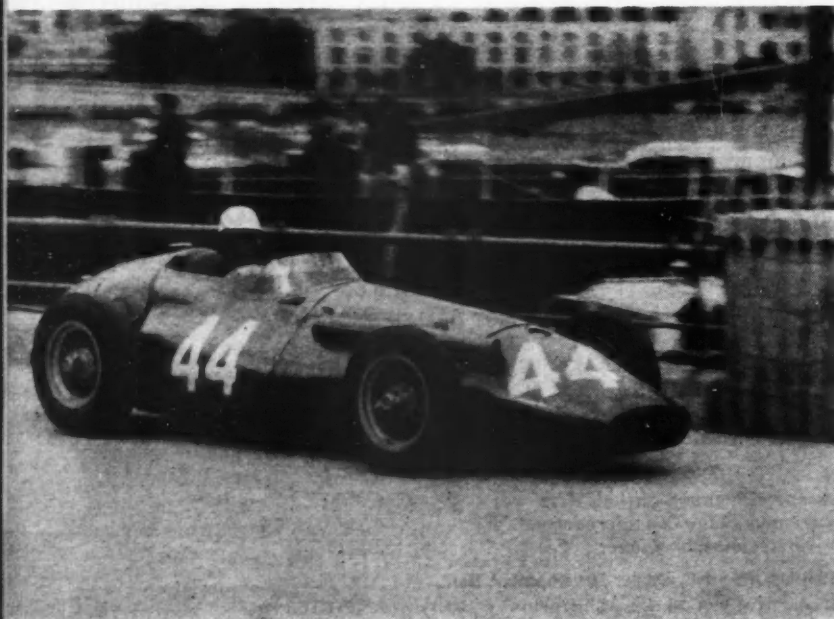


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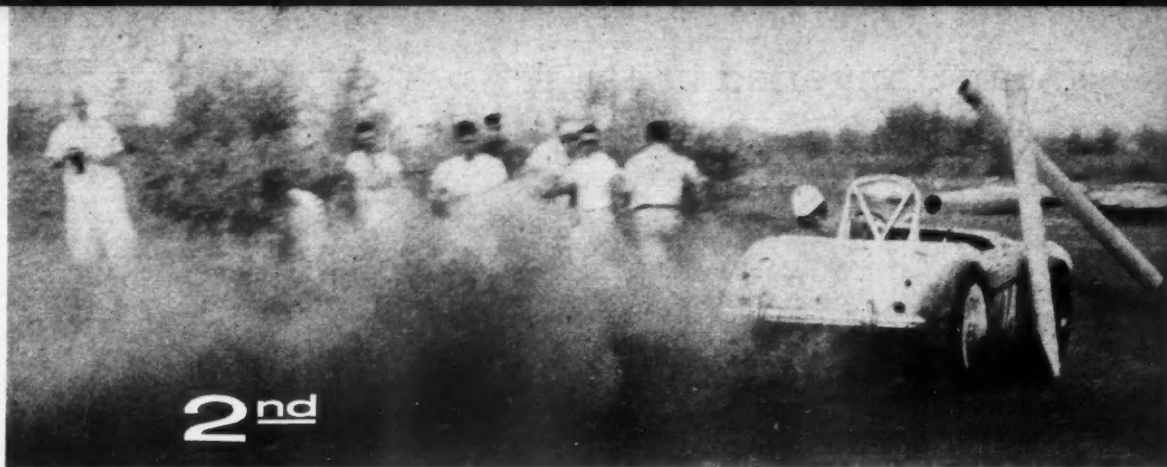
SANTA BARBARA MEMORIAL DAY RACE SAW NOVICE ART WHITE SPIN HIS MG. MARVIN REICHLER SHOT THIS FIRST PRIZE PHOTOGRAPH.

photo contest

THE EDITORS OF MOTOR TREND are looking for the three best photos or sequences of photos taken each month in the field of motor sports. And this includes all forms of motorized racing on land or water—anything that is exciting and pictorial.

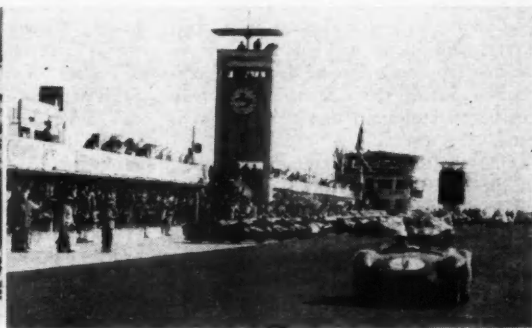


FEMALE ENTRANT at Monaco, petite Italian Maria Teresa de Filippis drove well but failed to qualify her badly outclassed Maserati. In pits (right) she graphically shows her disappointment, talking with wife of Taruffi.



HAWAII SPEEDWEEK saw plenty of corner action. Austin-Healey scatters photographers, raises dust, tum-

bles cardboard corner pylon. Richard Sherwin, on opposite side of track, grabbed second prize picture.



SHARP CONTRAST IS SEEN BETWEEN START AT MONACO (LEFT) AND MOSS OUT FRONT AFTER LE MANS START AT NURBURGRING.

Picture quality, good composition, current news value and photos that tell a story are what we want.

First prize is \$25, second \$15 and third award is \$10. If we select a picture sequence, we will pay the place award for

the first photo plus \$7.50 for each additional picture used in the series.

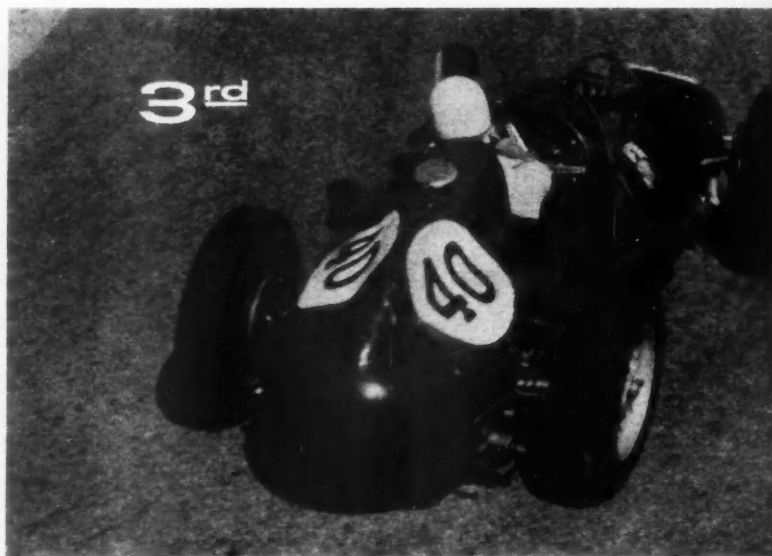
Please identify all photos with names, dates, locations and pertinent caption data. Contest is open to amateurs and professionals alike. Photos should be black and

white glossy prints, four by five inches minimum size. Please do not send negatives. Photos cannot be returned.

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MAURICE TRINTIGNANT, surprise winner at Monaco in the tiny Cooper-Climax, powers through the Gasometer-turn. The car, a private entry by Rob Walker, gave away nearly 100 hp to its more powerful rivals, including Ferrari, beat them handily.



VON TRIPS drifting a Formula 1 Ferrari Dino 246 is captured by Gunther Molter at the Monaco course for this month's third prize.

What Happened at INDY?

continued from page 23

wheels when the car is being driven through the track's four left turns, making it easier to handle and reducing the wear on its right tires.

One disadvantage of placing an engine designed to run in a vertical position on its side is its tendency to spray oil out of its various openings when it is running; however, this is a condition that can be corrected by the installation of a special sump on its crankcase, special oil drains in its exhaust cam housing, breathers in the correct places, and an additional scavenging pump or two.

Although cars with horizontal engines were in the minority in the starting field they succeeded in capturing first, second, fourth, 12th and 23rd places in the race. Despite the fact that they all had good drivers and crews and the accident in the first lap knocked some very stiff competition out of the race, this can't help but be an indication that their design is good.

One car that differed from the others in the race in that it had independent suspension for its front wheels was the D-A Lubricant Special. Built by Frank Kurtis, it features massive trailing arms, fabricated from sheet steel, to which are connected kingpin supports for the wheels. Handling difficulties were experienced with this car until minor changes were made to its steering linkage and front sway bar. Johnny Thomson, the car's driver, seemed to be pleased with it after these changes had been made.

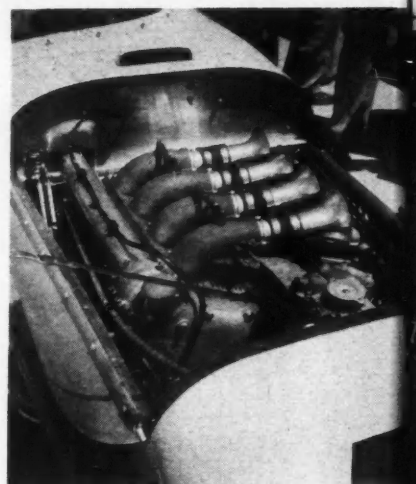
Outstanding cars of conventional, vertical engine roadster design were those built by A. J. Watson. Four Watson-built cars were in the race and of these four,

three were in the front row. Each of the front row cars had a qualifying speed over 145.5 mph.

The pole car, driven by Dick Rathmann, was built by A. J. specifically to sell at the Speedway. On May 11th, six days before the first day of qualifications, he sold it, less engine, and it was entered as a McNamara Special. The other Watson cars are owned by John Zink. Unfortunately, two of the front row cars—Rathmann and Elisian—were knocked out of the race by the accident on the first lap and the third—Reece—was damaged. Reece was able to continue the race but the damage to his car and the delay caused by the accident eliminated him as a possible winner. Jud Larson was driving the fourth Watson car. This is the car in which Flaherty won in '56. Jud was eighth.

Frames of the Watson cars and the Salih and Epperly-built horizontal engine cars differed from those by other builders in that they were more compact and seemed to have fewer members. Watson's frames looked flimsy in comparison to many others but the excellent handling characteristics of his cars attest to the sharp engineering that went into the design of the frames and the cars as a whole.

Although the other mechanics at the track are not to be discounted in any way, Salih and Watson must be considered the outstanding wrench men of this year's race by virtue of their achievements. Salih is obviously a perfectionist. This fact is reflected by his car, his garage at the Speedway, his tools, and the record-setting performance of his pit crew during the race. In all Salih has had three wins at the Speedway, his first being in 1951

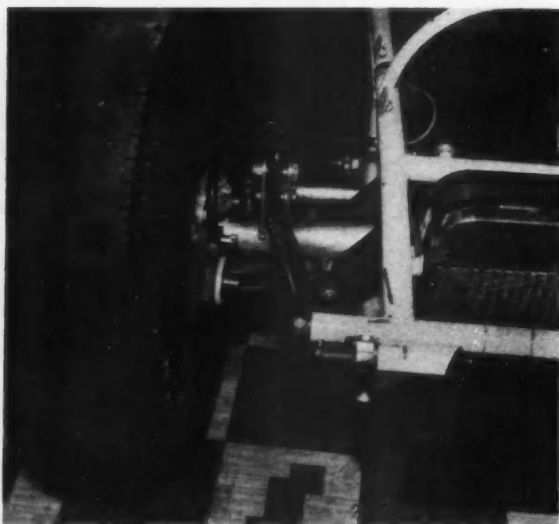


GERHARDT SPECIAL engine side panel and air induction bells are the basic differences from Jones-Maley car.

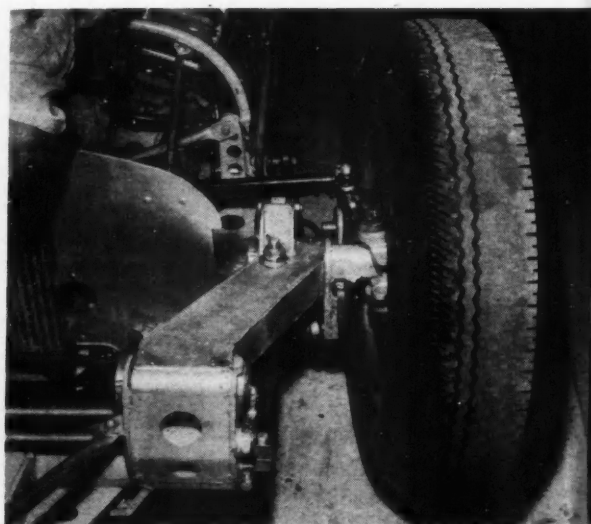
as chief mechanic on Lee Wallard's car.

A. J. has had two Speedway wins — Flaherty in '56 and Sweikert in '55. He was chief mechanic this year for the three Zink entries, which might be spreading his talents a little thin. Taking care of one car at the Speedway is a full-time chore if the job is to be done correctly. When one man has charge of three cars it's almost impossible for him to supervise and give his personal touch to the many things that must be done to a car to prepare it for its qualification attempt and the race.

For possibly the first time in his Speedway career 31-year-old Jimmy Bryan had a car that was capable of going the full



FRONT SUSPENSION with typical solid axle and torsion bars supports the frame load on most Speedway cars.



D-A CAR'S independent front suspension necessitated minor alterations to the sway bar and steering linkage.

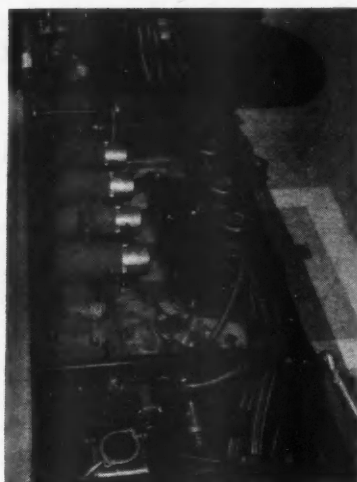
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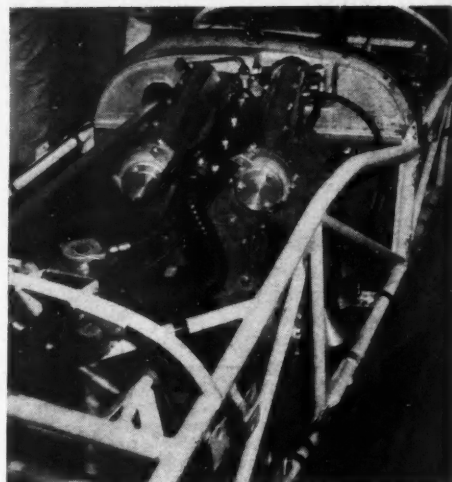
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CROWER'S fuel injector adaptor on Helse Special provides three fuel nozzles instead of the usual one.



MEYER-DRAKE on side in Jones and Maley car has special side panel to combat oil throwing problems.



WOLCOTT SPECIAL was only car at the speedway with engine installed at 13-degree angle off centerline.

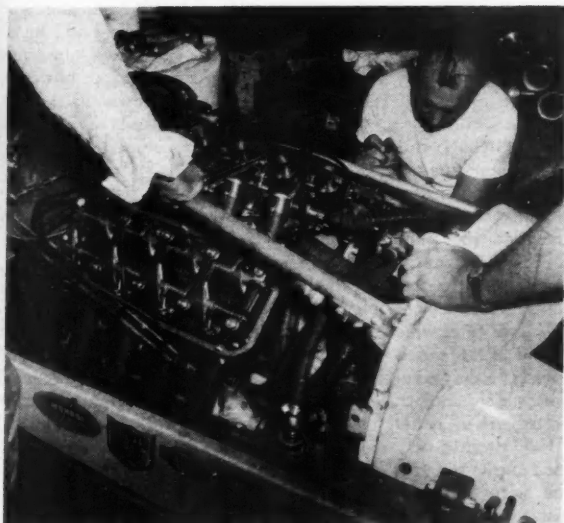
distance at winning speed. Salih brought the car to the Speedway ready to run and Bryan drove it a total of 280 laps between the first of May and the first day of the time trials to familiarize himself with its handling characteristics. Jimmy qualified the car on the first day of time trials and then it was completely dismantled and gone through by Salih, his right-hand man Howard Gilbert, and the rest of the crew. The meticulous inspection and workmanship that went into reassembling the car was almost unbelievable. Every part, large or small, had to be in perfect condition or it wasn't used. Absolutely nothing was left to chance. As a result of this care and attention the car was running

as well at the finish as it was at the start of the race. The combination of George Salih, car owner and builder; Sandy Belond, manufacturer of automotive exhaust system parts and sponsor of Salih's car; and an able, determined driver, this time Jimmy Bryan, had scored for the second time in a row at the Speedway.

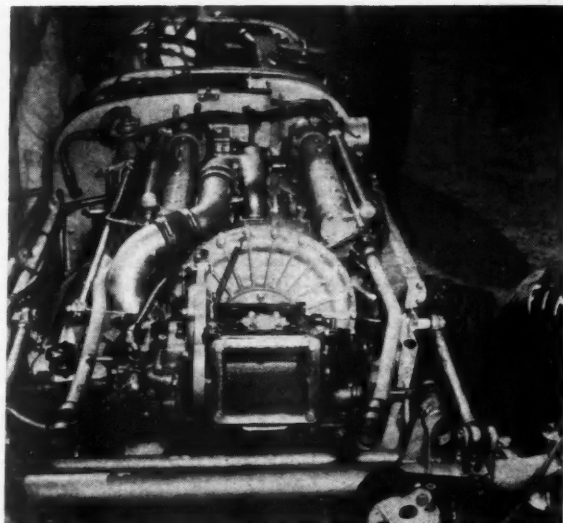
Pit stops have become an important part of this race. Seconds lost or gained while a car is in its pit can make the difference between an also-ran and a winner. Salih and his crew established a new pit stop record this year for fuel and tires. On this particular stop Bryan was in the pit only 27 seconds. George Amick, who took second place behind Bryan, would

have won the race by a margin of six seconds if his total time in the pit for fuel and tires had been the same as Bryan's. However, if Amick had pushed Bryan to the point of passing him to take the lead, Salih would probably have given Bryan the GO sign to stay ahead of the hard-driving rookie. Nevertheless, the few seconds between the first and second place cars show how important fast pit stops are in this race.

What's for next year? More of the same. Probably more cars with horizontal engines, faster speeds, more handling troubles, a slightly heavier purse, and a new Speedway Champion. But please, no more accidents. /MT



CAPANNA works on the second DeSoto engine installed in Duncan-Built Homes entry; it blew up in qualifying.



SUPERCHARGED NOVI has aircraft-type carburetor; '58 engine changes included two spark plugs per cylinder.

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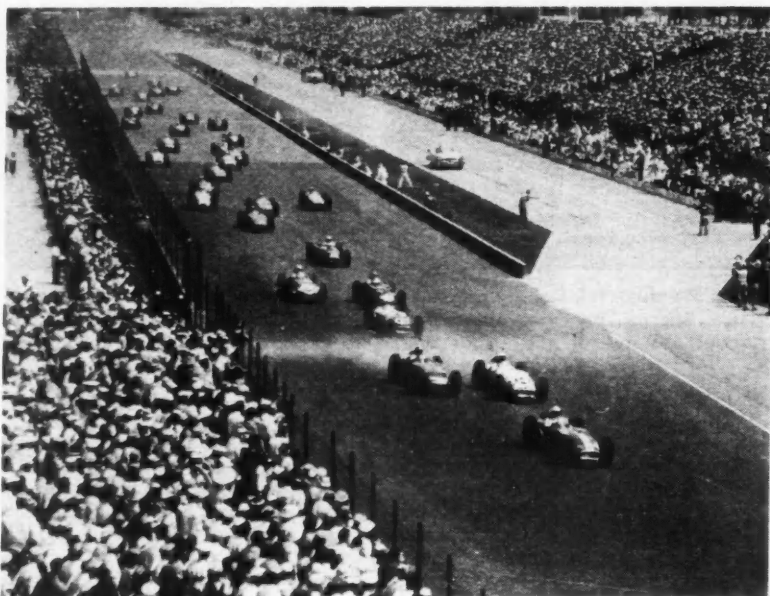
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What Happened at INDY? *continued*

What Happened at



WHICH START would you say was the much-maligned '58 Indy send-off? It's nearly impossible to tell. Above photo is '57 start; this year's is at right.

NOTE: Sam Hanks, last year's Indy champ, and MOTOR TREND's contributing editor on racing, was appointed Director of Racing at Tony Hulman's Indianapolis Speedway on May 8th, prior to the Big 500. In this yearly position, Hanks is bound to bring many improvements to this great classic. Here he answers critics of this year's start and places the blame for the accident where it should be.—Editor.

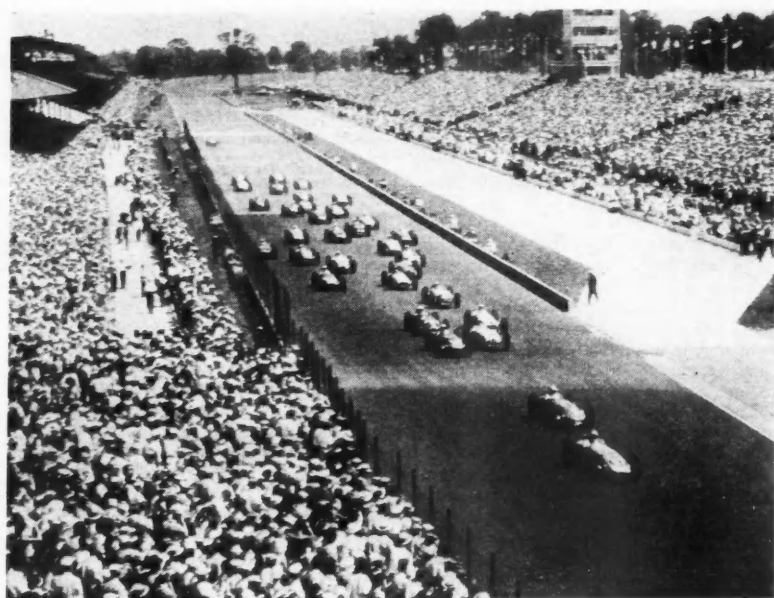
CONTRARY TO PUBLIC OPINION and comments made by some so-called experts, the actual start of the Indianapolis 500 this year had nothing to do with the accident that occurred on the third turn of the first lap. This is conclusively shown by the two comparative photos taken by Speedway management just after the start and from the same position of the 1957 and 1958 races. Without a magnifying glass, I defy anyone to pick out which is which. In fact, the cars in the 1958 start are in better formation than in the 1957 start.

What seemed "fouled up" was the parade lap prior to the start. This was caused by the car owners and/or crew chiefs for Dick Rathmann, Ed Elisian, and Jimmy Reece (who made up the front

row) sending their cars charging out of the pits ahead of the pace car which I was driving down the track with Tony Hulman, Speedway owner. It is a rule of the Speedway that no car or cars are ever to be ahead of the pace car on the parade and pace laps. I figured from the way the drivers took off that they could make a complete circuit and catch up with me easily during the parade lap; however, they apparently slowed down on the opposite straightaway, instead of speeding on around into their respective starting positions.

As far as the accident on the first lap is concerned, without a question this was caused by Ed Elisian's over-eagerness or misjudgment. The start itself was good, with the cars going through the first turn in good order, through the short straightaway, through the second turn and then down the long back straightaway. On the third turn, where the accident occurred (approximately 1¼ miles from the start line), the cars were still closely bunched and booming down there at about 165 mph. What happened in that turn is that Ed Elisian, apparently determined to lead, went into the turn on the low side out of the groove. With a heavy load of fuel, a new set of tires, and traveling too

ed at the Start?



INDY START for this year was not a contributing factor to 15-car pileup. Accident occurred on third turn, was result of bad judgment of one driver.

fast he lost control of the car and went into a long slide pinching Dick Rathmann against the wall. With these two cars spinning in front of the closely-grouped other 31 cars it is easy to see why 15 cars were involved in the accident. It was unfortunate that racing lost one of its finest drivers and true gentlemen, Pat O'Connor.

There has been some justifiable criticism of the lifting of the ban on Ed Elisian from further racing. No doubt the USAC Board felt that everyone is entitled to a mistake. Ed had first been banned from USAC racing because of his bad debts, not his driving. He owed a good deal of money and the board reinstated him to drive at Indianapolis. Because of the fact that he owed so much money he could have driven a little too eagerly.

As far as I can gather from the conversation with the guys who drive against him, it is about a 50-50 toss-up as to whether they would like to continue to race against him or not. A driver who is racing at Indianapolis with the desperation of clearing up some debts is not a good thing. In the past Wilbur Shaw and all of us have always warned rookie drivers, and in fact all drivers that the Indianapolis 500 is not won in the first

lap. I believe the most dangerous time of the race is during the first five laps because the cars are still tightly bunched and are carrying full loads of fuel.

As far as any criticism is concerned as to why we didn't stop the race the only time a race is stopped is when the course itself is completely blocked. Since the field wasn't blocked and there was plenty of room for everybody to get through, the race did not have to be stopped. Motion pictures taken during and after the accident show the cars moving through the area on the caution light with ease, allowing track personnel to remove the damaged cars from the track.

When the new pit area was built it was constructed for the protection of cars and crew in the pits during competition. Its construction makes it very impractical to start the races as before. The starting procedure is very simple and would be every bit as colorful if all the contestants would just follow the written and verbal instructions.

Though we feel that this year's start would have been very colorful had not the front row jumped the gun, you can be sure that Speedway management will make an intensive study of starting procedures for the 1959 500-miler.

/MT

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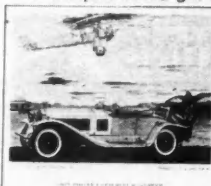
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What Happened at INDY? continued

Why Fangio Withdrew

by D. M. Bartley

THE REASONS BEHIND Fangio's with-
drawal from Indy after passing his driver's
test were many. The Dayton Steel Foundry
Special on which he practiced for two weeks
never functioned effectively. Fangio never was
able to attain more than 5800 rpm with it,
with 6200 necessary for competitive speed
in the straights. Mike Magill, driver of the
car in both the '57 and this year's Indy race,
was never able to lap it more than a fraction
faster than Fangio—qualifying it at 142.27
mph. And Fangio's times out with the car
were fraught with mechanical failures. One
"practice session" consisted of six laps and
six pit stops for repairs.

The second problem was the language
barrier. Everyone who could tried to help
as much as possible (ex-Indy driver Mauri
Rose most of all) to let Fangio know the
multitudinous differences between Grand Prix
and Indianapolis racing—differences in-
volving signals, regulations, traditions as
well as driving patterns—but many things
were not clarified until too late. For example,
Fangio, always an ethical driver and schooled
for 20 years in terms of factory or owner
contracts, did not understand that at Indian-
apolis it was not considered unethical to
"jump" cars, even though he had a contract
only to try the Dayton car. By the time he
began to realize that he would not necessari-
ly deprive another driver of a secure job by
taking another car, he felt that it was too late
to obtain sufficient practice to have even a
chance to win on another strange machine.

FOR FANGIO, there were far more considera-
tions in the balance than for most Indianapo-
lis drivers. Independent of the fact that the
odds for all drivers are only one in 33 of
winning, Fangio also had to realize that
race fans in the rest of the world had no
idea that the Indy 500 is so radically dif-
ferent and so highly specialized. Sincerely
wanting to compete there, nonetheless it
seemed senseless to him to do so with an
inferior machine or insufficient practice. Like
all great drivers, he can only race to win—
and he is much too race-wise to delude him-
self that nowadays any amount of skill can
make a winner out of a second- or third-
class car.

A good deal was said about Fangio's meth-
od of driving the Indy oval. He has not
yet found the precise Indy "groove." He went
slightly deeper into the turns than most (but
not all) of the U.S. pilots, came in toward
the apex of the turn a fraction sooner than
usual, climbed high up to the outside of the
16-degree banking also a bit sooner than
customary, cutting for the second turn a
little before most drivers.

There seems little doubt that Fangio could
have done better with a faster car. The day
before he left Indianapolis he tried a Novi

and cut a 135-plus lap on the third tour.
Veteran Novi driver Paul Russo could
qualify no better than 142.9 mph for 14th
place.

At Indianapolis, the general consensus was
that Fangio was an extraordinarily fine
driver—though not certainly any better than
the home-grown boys—and that he was also
an immensely likeable gentleman. The most
surprising statements came from American
champion Jimmy Bryan, whose driving
greatness was reaffirmed by his Indy victory,
but whose personality is very, very different
from that of the innately modest world cham-
pion. Of Fangio, Bryan said (in sequence),
"He hasn't got a chance. I'm not trying to
run him down, but he's just another race
driver at this speedway," and "The 500 is
too tough for Fangio . . . He's a great race
driver and a great sports-car champion
(Fangio's five world championships have
all been gained on single-seater Grand Prix
cars, not sports cars), but in this case, it's
like trying to make a quarter horse run 2½
miles." (This is an odd analogy in light of
the fact that Fangio repeatedly ran some
of the most gruelling endurance races in
the world, some of them more than three
times the length of the Indy 500.)

FINALLY, AFTER FANGIO had returned to
Buenos Aires (his manager, Marcello Giam-
bertone, remaining in Indianapolis to ar-
range for a Monza car and to "scout" the
machinery for a possible Fangio mount for
1959), Bryan said, "He's really a great
driver. I watched him very carefully. I never
saw anyone go faster out of the groove. And
look what he did on just the third lap with
the Novi. I'd say that he's the world cham-
pion road-racing driver where I am the
champion closed-circuit driver. [All Grand
Prix races are run on closed-circuit road
courses.] As for who is world champion, I
guess nobody will know until we race
against each other—which I'd like very much
to do." Then unselfconsciously, Bryan added,
"He's the most underrated driver I've ever
seen at the Speedway."

Floyd Clymer paid Giambertone \$1500
of his own personal Fangio-challenge money
—\$500 for coming to Indy, \$1000 for pass-
ing his driver's test. Giambertone promptly
gave the money to the Cancer Research Fund
in Indianapolis.

As of this writing, there is still a very
good chance that Fangio will drive an Indi-
anapolis roadster at Monza—but definitely
not the Dayton car which was not ready in
time to go. As for next year, Fangio told
me—and everyone else who asked—that he
hopes to return to Indianapolis, much earlier,
much better prepared, with a first-class ma-
chine (perhaps one which he will buy)—
and an interpreter.

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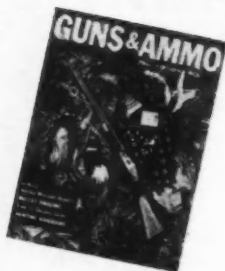


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KAISOTO LEAVES EQUAL RUBBER STRIPS, THE RESULT OF HI-TORK DIFFERENTIAL.

KAISOTO

continued from page 33

oil pressure sending unit were adapted to the engine. Current for the gauges was dropped to six volts by installing a voltage reducer (resistor) between the ignition switch and the line to them.

All exterior lights on the car were replaced with 12-volt bulbs. This was easy to do because six- and 12-volt bulbs use the same sockets. A slight modification to the light switch enabled a voltage reducer to be inserted in the line that feeds the original interior lights.

Connecting the transmission to the rear axle assembly with a shortened 1935 Packard driveshaft fitted with a Kaiser rear universal joint completed the drive-line. The complete Packard front universal joint was used as it was found to fit the output shaft of the DeSoto transmission. Fitting the Kaiser U-joint to the shaft was easy because the outer diameter of the adapter stub on its front yoke was the same as the inner diameter of the shaft. The stub was inserted in the shaft and the two were welded together.

Once the car was drivable it didn't take long to find that its 4.55 to 1 rear axle ratio was much too low for the DeSoto. Acceleration was terrific at any speed but at 55 mph the engine sounded as though it were going to jump out of the frame. A set of 3.31 to 1 gears raised the ratio to where it is much better for

highway driving, with a very slight loss in acceleration ability.

While the rear axle gears were being changed, the stock ring gear carrier and differential assembly was replaced with a new Lyeth Hi-Tork differential. Hi-Tork differentials are limited-slip units that guarantee equal torque at each of the car's rear wheels regardless of the traction conditions encountered by the wheels.

And so, that's the start of the KaiSoto, a laboratory on wheels, which in the process may also become an ideal, all-purpose car.

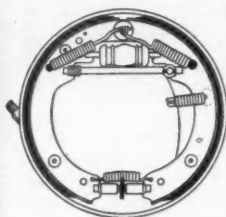
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LYETH Hi-Tork differential, 3.31 to 1 gears were installed in the KaiSoto.

Which brake design is on your car?

The Bendix Hydraulic Brake is used (with some modification) on most makes of General Motors, Ford Motor Company, Hudson, Nash and Packard cars. In this brake assembly, both shoes are connected by means of a spring at the heel, or bottom end, of the shoes. Because of this connection, these shoes thus work as a team and are referred to as primary and secondary shoes.



Bendix Hydraulic Brake

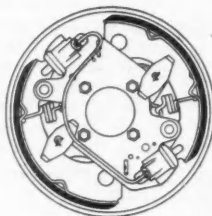
When the brake is applied with the car in forward motion, the wheel cylinder actuates only the primary shoe. This shoe in turn actuates the secondary shoe by means of a feature of the brake. This feature, called servo action, forces the secondary shoe into the rotating brake drum, with the result that it does about twice as much work as the primary shoe.

Because of the difference in work load for the two shoes on this brake, Raybestos provides a combination of linings with different coefficients of friction for each shoe within a single brake assembly. Raybestos PG sets ready for riveting and all "Contour Ground" PGP Bonded

Lined Brake Shoe sets contain a high friction lining for the primary shoe and a low to medium friction lining for the secondary shoe.

Inferior linings on this brake can result in short lining life, noise, dive, grab, fade, or pull to one side. The Raybestos Proving Ground Tested set engineered for your car will have the best combination of linings to give you quiet, safe, sure stops throughout their long life.

The Center-Plane Brake, also known as the Total Contact Brake, is used on some 1956 Chrysler product cars and all 1957 and 1958 Plymouth, Dodge, DeSoto, Chrysler and Imperial cars. On the front wheels each shoe is actuated by an individual wheel cylinder. Both shoes are called forward acting shoes and should do exactly the same amount of work. The rear wheels use the same shoes, arranged to have one forward and one reverse shoe.



Center-Plane Brake Front Assembly

When the brake is applied, a rod going from the wheel cylinder to the toe end of the brake shoe forces the toe end of the shoe it works with against the rotating drum. As the toe of the shoe is forced against the brake drum, it tends to carry the entire shoe with it. This action establishes total contact between the brake lining and the brake drum.

All cars using this brake are originally equipped with linings bonded to brake shoes instead of being riveted to them. Since there are no rivet holes drilled into the shoe, it is necessary that these brake shoes be replaced with exchange lined brake shoes when a relining is needed.

Inferior lining in this brake often results in short lining life, grab, fade, noise, and pull to one side. In order to provide the best possible brake performance, Raybestos uses a medium-low to medium friction material. You can always depend on Raybestos Proving Ground Tested linings for smooth, quiet, even stops and long life.

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for attaching a boat on the roof. The interior is sprayed with a rubber base undercoating, painted aluminum. The outer surface may be painted any color—included with the installation in the basic price, starting at \$279, f.o.b. factory. Cost includes two folding cots, 29" x 72". The tops are made by Borg Welding and Manufacturing Co., 17221 S. Western Ave., Gardena, Calif.

STATION WAGON PADS of lightweight foamed polyether that can be carried by a child are the latest accessory for station wagons and pickups. They are available from Foam Shops Inc., 213 S. Pacific Coast Highway, Redondo Beach, Calif. The pads are half the weight and will not tear or abrade as does the more conventional material. The



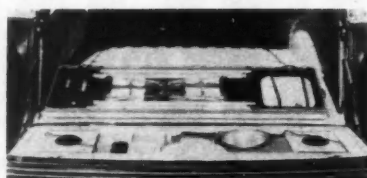
manufacturer claims that the Stafoam plastic filling will not support combustion, is not affected by moisture, body fluids or other chemicals or acids which adversely affect foam rubber. Standard rectangular pads, covered with supported vinyl plastic in light tan or maroon, are 2" x 43" x 74". Deluxe pads are fabricated in two sections so that the forward pad may be removed to accommodate rear seat. Other styles, contoured to fit fender wells, can be custom-made in any thickness, fabric or color. Prices range upward from \$29.95.

72 MOTOR TREND/AUGUST 1958

NEW SPOTCHECK dye penetrant inspection materials, now available in non-flammable or very-high-flash-point formulas in either pressure-spray cans or in bulk, have been announced by the Magnaflux Corp., 7307 W. Ainslie Ave., Chicago 31. The new Spotcheck provides a convenient spray-can dye inspection method for locating cracks, seams, porosity and other defects open to the surface in almost any solid material. These dye penetrants are not made with carbon tetrachloride-base solvents, but with the safer chlorinated hydrocarbons. The handy pressure containers can be used to test machinery parts almost anywhere in the plant or in the field. Spotcheck penetrant and developer are now also available in new water-wash formulas for quick and thorough removal by water spray. Spray cans are priced at \$4.50 singly, \$2.00 each in dozen lots. Bulk prices on request.

PLASTIC BOTTLE HOLDER with permanent color—ideal for use in automobiles, on boats or even around the home—has been announced by the manufacturer, Mygra Sales Co., P.O. Box 721, Fort Worth, Tex. Named the Beverage Tray, it holds three bottles, cans or glasses, prevents liquids from spilling or tipping. Three separate corner holes are molded into the plastic and with the legs in the proper holes the tray will sit firmly on the floorboard of any model car. Retailing for \$1.98, the tray can be purchased from most jobbers and distributors.

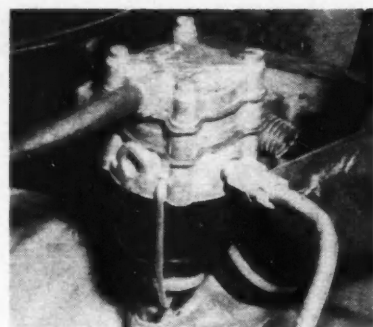
TAILGATE CAMPING KITS are now available for Ranchero and Ford wagon owners. By adding 1½ inches to the depth of the tailgate, the compact kit holds various items such as two gas burners, table with four camp stools, and assorted cooking utensils. Made



by the Marklane Manufacturing Co., 1450 Lipan St., Denver, Colo., the kits sell for \$129.50, f.o.b. Denver. Other kits for various makes of station wagons will be available soon. The Marklane Co. also manufactures plastic tops for pickups.

SEALING PROBLEMS can be licked with the new Duro Clear Windshield and Window Sealer, recently introduced by the Woodhill Chemical Co., 1340 E. 34th St., Cleveland, Ohio. Easy to use, the new product is reported to eliminate leaks and drafts around windshields and rear windows. A special applicator tip enables the user to lay a bead of material with minimum trouble.

AUTO TOUCH-UP has been made much easier with the new paint dispenser from the Tipon Corp., 416 W. 33rd St., New York. Used as simply as a pen, the dispenser is a non-leaking unit with a nylon brush that automatically releases the proper flow of paint through a valve action. Twenty assorted DuPont automobile colors are available—ideal for touching up nicks and scratches. The price is \$1.



STOP FLOODING and stalling problems with a new fuel control from GM's AC Spark Plug Division. The device, called "ACon-o-Mizer," is a fuel pressure regulator mounted between the fuel pump and carburetor. Planned for sale in the replacement market, the price will be \$9.90, including necessary fittings. The regulator reduces fuel pressure at idling or normal cruising speeds and increases pressure when it is needed for extra bursts of power.

CAR TROUBLES late at night? To combat the increasing number of injuries and deaths resulting from repairing automobiles along the highways in the dark, Chempounders, Inc., Mount Vernon, N.Y., have come up with a new trend in flares, called "Kempo Flare Kit." It contains three units and retails for about



\$1. Kempo flares are good for about one hour's burning time; they are windproof, rainproof, reusable and completely safe. They are visible for 1000 feet even in bad weather.

EVER RUN OUT OF GAS? A compact, easily installed gauge that warns a driver when his gas supply is low—thus avoiding dangerous and costly incidents on busy highways—has been announced by Practical Sales Research, Inc., 726 Lothrop St., Detroit 2, Mich. The "Electronic Gas-Chek" is a compact unit about 3" x 4½" x 1½"; it attaches to any hole on the back of the dashboard or to the steering column, making a good ground contact. When the gas supply reaches a low of three gallons, a pleasant, intermittent buzzing is heard. When the gas supply dips to two gallons, the buzzing becomes steady until the gas tank is filled. The "Gas-Chek" will function accurately, regardless of gas gauge inaccuracy, as it gets its impulse from the float in the tank. Selling for \$9.95, the gauge can be removed and transferred easily to the next car.

THE EMPIRE SPEEDPLATER Product Use Test in last month's issue inadvertently overlooked mentioning that this chrome-plating kit is available from Empire Merchandising Co., 4 N. Third Ave., Mount Vernon, N.Y. The regular home kit sells for \$14.95, heavy-duty service station outfit for \$34.95.

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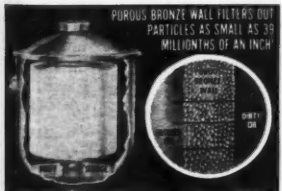
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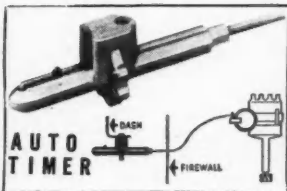


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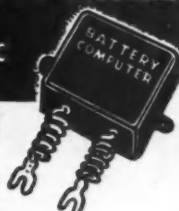
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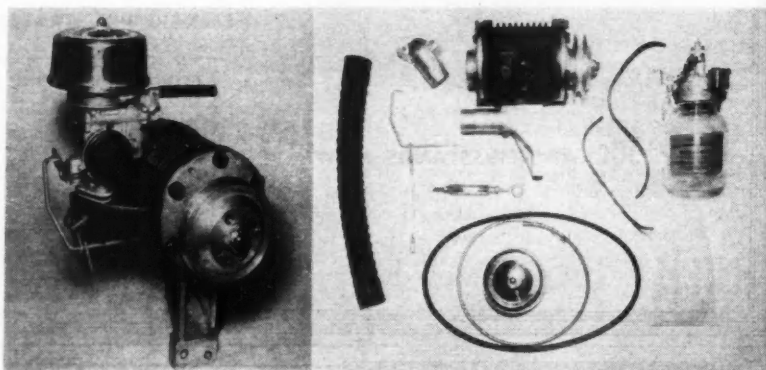
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PRODUCT USE TEST

Judson Supercharger Kit cuts Renault Dauphine's acceleration times in half

by Alex Walordy



JUDSON BLOWER for Dauphine uses stock Solex carburetor, with richer-mixture main jet. Complete kit (\$165) contains chromed air cleaner, inverse oiler.

WHEN A CAR BECOMES as popular as the Renault Dauphine, it is only natural that a great deal of attention is devoted to make it "go" still faster and better. Even the Renault factory caught the "soup-up" fever and released a Gordini Dauphine for the use of the enthusiasts. Though the Dauphine falls in the economy car class, its handling ability enables it to use a great deal more than its stock power output.

There are three basic approaches to increase the power of a Dauphine which can be used either singly or in combination: 1) modify the existing engine, 2) change to a larger size engine, or 3) install a blower. Cost, weight, and the gains in power will influence your decision.

Changing to a larger size engine, in an application like the Dauphine, would be quite costly and would further unbalance the weight distribution. Modifying the existing engine is one of the most economical steps, especially if you plan to carry out your own modifications. The horsepower gain will be moderate unless you are willing to go all-out. However, one of the disadvantages of a highly modified engine is that it becomes less tractable at low speeds. To get peak power, you must keep the engine at a fairly high rpm range, which involves additional shifting, and possibly using the four- or five-speed gearboxes available for competition.

In contrast, a blower, especially one of the vane type, can offer a great many ad-

vantages. In a normally aspirated engine, the pistons rely on atmospheric pressure to draw the air-fuel mixture from the carburetor into the cylinders. A blower, on the other hand, is a pump driven by the engine; it packs in the air-fuel mixture at higher than atmospheric pressure. As the power output of the engine is proportional to the amount of the air-fuel mixture burned during the power stroke, the use of a blower has the same effect as a change to a larger displacement engine. The addition of a blower does not pose any weight or handling problems, which makes it all the more desirable. Also a blower can be removed from a car just before selling it, and used on another car.

Judson Research and Mfg. Co. has been making very successful blower installation kits for the VW, MG-A and numerous other cars; they were bound to turn their attention to the Dauphine sooner or later. A visit to the home office and plant in Conshohocken, Pa., proved most interesting. There we were introduced to a neat cream-colored Dauphine, undistinguishable from any of the thousands of other Dauphines roaming the highways. Even starting the engine did not disclose any unusual sounds, other than a slightly more mellow tone at the upper rpm. A ride, however, revealed some startling differences.

On starting off, the seat is firmly pushed into your back. The improvement in acceleration cuts down the 0 to 50 time from 18 to 10.5 seconds. Zero to 60 is reached

in a very creditable 15.5 seconds—or just half the stock time. That is quite an improvement for the fairly low \$165 tab of a blower kit. With the stock Renault muffler the noise level was not higher than that of the unsupercharged Dauphine. Judson does recommend a switch to the Abarth muffler to reduce the back pressure in the exhaust manifold at high car speeds. The entire blower kit weighs 16 pounds, so that a change in handling due to weight distribution is completely unnoticeable. There is, however, a welcome change in being able to use the throttle more aggressively in turns, and in acceleration. The change in top speed is not too considerable, from 74 to 82 mph. This is due mostly to the high overall gear ratio.

Lively as the stock Dauphine is, there is no comparison between it and the blown

version. The blower provides ample acceleration for coping with most any traffic condition from low speed pickup to passing on the highway.

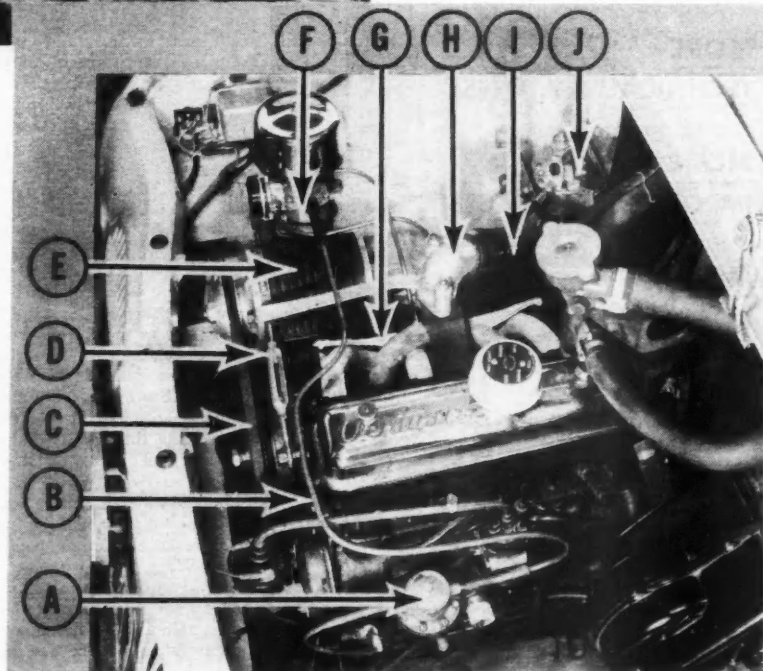
MPH	ACCELERATION	
	Unsupercharged	Supercharged
0-30	7.2	4.5
0-40	12.0	7.0
0-50	18.0	10.5
0-60	31.0	15.5
0-70	71.0	34.0

The noise level is no higher than that of a stock Dauphine. Those who do not know the joys of downshifting will be glad to learn that second does not have to be used any more than on an American car.

The Judson blower allows you to drive as economically as you wish, and still have ample power on tap. Below a given throttle opening the manifold is still under vacuum as the air entry to the blower, via the carburetor, is restricted. The engine is thus operating as though the blower were not there. When the throttle is opened wider the blower raises the manifold pressure, and fuel consumption will go up in relation to the boost pressure.

/MT

SMALL IN SIZE, 16-pound supercharger can raise engine output 50 per cent.



BLOWER INSTALLATION is quite simple. Fuel pump (A) feeds unit through curved line (B). Belt (C), shared with generator, has its tension adjusted by turnbuckle (D). Supercharger (E) has Solex carburetor (F), with chromed air cleaner, mounted on top; it's protected from manifold heat by asbestos shield (G). Special manifold elbow (H) connects to flexible hose (I) from blower outlet. Inverse oiler (J) provides lubrication for both blower and upper end of engine; one-quart jar holds lubricant for 800-1000 miles.

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PRODUCT USE TEST

**Carr-Waxx offers one step
wash and wax operation**



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Ford has kept repaint fresh, bright.

WAXING AND THEN POLISHING a car is laborious and time-consuming. Some people enjoy it—or say they do—but most don't. Consequently, any product eliminating the necessity for formal waxing while providing wax protection is worth careful study.

Carr-Waxx is such a product. The developer, Keith Carr, makes only a few claims, most of which were verified by our tests. He wanted something safe for all finishes, easy to use, economical, able to withstand all climates and keep the finish gleaming.

A white, creamy emulsion, Carr-Waxx mixes readily with tap water, about three ounces to a pail. All that is required is to wet the car down and, using a sponge or cloth, wash with the solution. A clear water rinse and a wipe dry with cloth or chamois complete the job. Regular use, weekly or more often, will keep a thin protective coating of wax on the car. An eight-ounce can costs \$1.98 from Carr Products Co., P.O. Box 2, Sunland, Calif.

Carr-Waxx contains no abrasives so there is no chance of wearing through the paint as often happens with other waxes or cleaners. It contains no detergents which may leave a dulling film. It will not remove oxidation or road grime—that should be removed with a commercial cleaner before starting use of Carr-Waxx.

Our tests, conducted on a new Pontiac with a good finish and on our KaiSoto laboratory car whose paint is thinning badly, showed that the use of Carr-Waxx can be detected visually in just a few applications as compared to control areas which were washed with clear water. Without a controlled test of from six months to one year it is impossible to determine whether or not there is climatic protection. We did examine a 1947 Ford which has been washed only with Carr-Waxx for the past three and one-half years. The sparkling black finish is as bright as the day it was painted.

—Wayne Thome

PRODUCT USE TEST

Seal-O-Matic eliminates clanking noise in driveshaft

ONE OF THE MORE IRRITATING and costly faults in most of our high torque, powerful modern automobiles is a clanking noise or vibration in the driveshaft or transmission. Actually this is caused when the rear springs spread, and the rear end and driveshaft are pulled away from the transmission, causing an air pocket. Then, when the driveshaft goes home, this creates the loud clanking noise.

The Traction-Master Co. of Los Angeles, known for their Traction-Masters, have come up with what they believe is a solution.

Seal-O-Matic is the product of three years of research, development and practical road-testing. It has double bearing surfaces to provide true and constant alignment of the transmission outshaft and the driveshaft—preventing the eccentric rotation which



SEAL-O-MATIC (r.) replaces oil seal (l.), is shown installed on '56 Merc.

causes "snap," as well as vibration and wear. The seal also provides better protection permanently against transmission oil leakage, and therefore it really serves a dual purpose.

For our test the seal was installed on a '56 Mercury and on a '56 and '57 Thunderbird. The complete installation takes about 20 minutes. If by chance you intend to give the product your own road test, and you already have a set of the regular Traction-Masters on your car, it is suggested that they be disconnected for checking the full effectiveness of the seal.

In our test the car was given severe torque by shifting gears back and forth, which would normally create clanking or snap vibration. This was eliminated entirely. The test was conducted on the open highway, as well as in stop-and-go driving in business and residential areas, and also over secondary roads, some of dirt and gravel.

Fitting most popular cars, Seal-O-Matic costs \$11.95, is available from Traction-Master Co., 2917 W. Olympic Blvd., Los Angeles 6.

—Robert Giedeman



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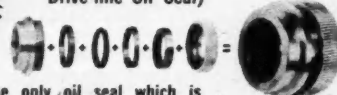
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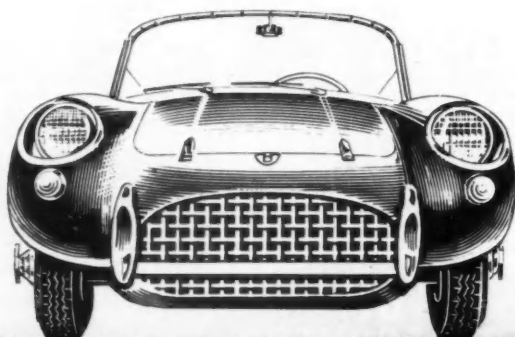
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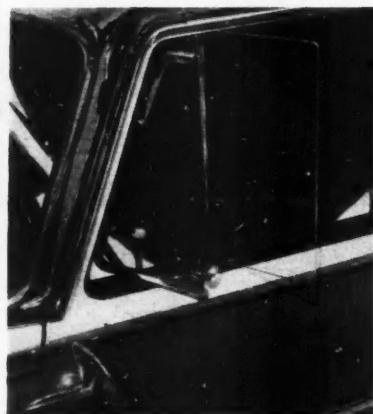
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PRODUCT USE TEST

**Wind-Stopper offers solution
to back seat draft problem**

LATE-MODEL CAR DESIGN—with narrower vent wings and wider windows—has posed a drafty problem for back seat passengers. In addition, higher legal speeds mean more air roar that often necessitates shouting conversations.

A solution to these annoying discomforts is now offered by the Wind-Stopper Co., 2680 Geary Blvd., San Francisco 18, Calif. Their namesake product, the Wind-Stopper, is a supplementary windwing that mounts easily with two small clamps to the forward window channel (see illustration). Made of non-breakable, distortion-free aircraft plexiglas,



QUICKLY INSTALLED with two simple screw clamps, Wind-Stopper adjusts easily to wind-deflecting position.

the Wind-Stopper is fingertip-adjustable to any angle. One of the three models available should fit almost any late-model car.

We tested this product on a '55 Dodge. Family passengers (who had previously complained of back seat drafts) were taken for a city-and-highway ride, with windows and wings in various open and closed positions. It was soon agreed—by driver and passengers alike—that Wind-Stoppers satisfactorily perform the function for which they were designed.

At higher speeds wind pressure had a tendency to force back the extended wing, but a partial turn of the bolt in the friction hinge quickly remedied the matter. The theft-proof inside mounting position means that the Wind-Stopper can be extended outward only when the window is fully open, and likewise must be swung inside the sill line before the window can be rolled up—but this becomes an instinctive step in use.

Wind-Stoppers are priced at \$6.95 for the driver's side only, \$13.90 for both sides.

—Erwin Rosen

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'36-'37 CORD 810-812 SERVICE MANUAL. Complete overhaul & tune-up info. Over 200 pages, including parts list. \$15. Norman Doyle, 10824 W. Estates Dr., Cupertino, Calif.

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Gold-plated interior trim: 29,000 mi. A rare collector's item in perf. cond. \$5500. Ernest Durrett, 1296 Fairview Rd. NE, Atlanta 6, Ga. Phone DRake 7-9234.

'50 DE SOTO 4-dr. sed. Orig. uph.; top & body in exc. cond. Driven every day this past winter. \$225. James V. Pierce, 2232 Payson, Quincy, Ill.

'40 LINCOLN CONTINENTAL customized coupe-de-ville. Franklin V-12 engine, Turbo-supercharged, 2 overdrives, new 7.00x16 tires. Featured Jan. '54 Hop-Up. Best offer over \$600. Stuart A. Woodward, Cedar Beach, Belgium, Wis.

'40 CADILLAC 60 Special with sidemounts. Orig. owner, under 54,000 actual mi., always garaged. Probably unique in this exc. cond. \$1500. Mrs. J. W. Hubbard, 1310 Kanawha Blvd., Charleston, W. Va.

'47 CADILLAC boat-tail rdstr. Alum. body & grille by Mercedes. Chrome wheels, Hydra-Matic transmission, red leather uph. Good rubber, good running cond.; can be driven anywhere. \$895. J. Weiser, 3710 S. Robertson Blvd., Culver City, Calif.

'31 MODEL A tudor in very good running cond. Exc. body—no cracks or rust spots. All orig. equip't, including instruction manual. Make offer. Alan J. Rohwedder, Olin, Iowa.

'41 BUICK L-12 7-pass. limousine. Owned by U. S. Navy at Pearl Harbor & assigned to Chester Nimitz during World War II. Everything in very good cond. Asking \$595. Peter A. Ross, P.O. Box 2627, Honolulu, Hawaii. Phone 25-4122.

'29 MODEL A cpe. Completely restored; over \$900 invested. A real beauty—drive anywhere. \$200 spare parts included in total price of \$700. C. B. Bredt, P.O. Box 142, Lillian, Ala.

BRASS BULB HORN—triple-twist with 4 ft. flexible brass tubing & bulb \$20. Also matched set of new Lincoln Zephyr timing gears in orig. carton, \$15. L. Ray Hove, 5606 Clinton Ave., Minneapolis 19, Minn.

EDELBROCK MANIFOLD, 3 Ford carburetors with progressive linkage for '55 Cadillac. Used 3 months. 1st \$125 takes. George Moores, Box 2001, Terminal Annex, Los Angeles 54.

LITERATURE: Duesenberg Model J—copies 1931 Revised Parts List, \$15; '31 Specifications Book, \$10; '34 Supercharger Parts List \$20. A. R. Thurn, 1865 Cloverleaf, Bethlehem, Pa.

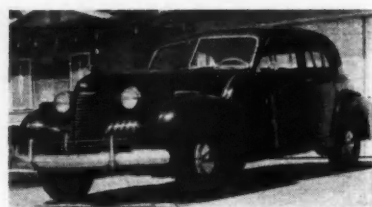
'47 LINCOLN CONTINENTAL conv. New: white top, black paint, w.w.s. V-12 engine completely o'hauled. \$1500, or will deliver anywhere in U.S. for \$1650. T. E. Weiss, 1629 Crowley, Wichita, Kan. Phone AM 7-4974.

'41 CADILLAC RADIO, exc. '33 Auburn parts: headlamps, cowl lamps, horn, Bendix Startrix, dual-ratio axle, chassis lubricant. Radiator ornaments for '34 Pontiac & others. Steve Gamble, 732 W. Spring St., Lima, Ohio. Phone CA 4-3353.

'28 HUPMOBILE 4-dr. sed. Body in good cond.; also in good running cond. Best offer accepted. F. A. Smith, Rt. 2, Urbana, Ohio.

'31 MODEL A cpe.—with or without engine & transmission. No rust; few dents in fenders. Body in good cond. Best reasonable offer. Ronald Kuhlman, 322 S. Hartwell St., Gilman, Ill.

'26 STUDEBAKER 4-dr. sed. Engine, thruout; very good cond. inside & out. \$600. Bernard J. Parks, 5421 Graves Ave., San Jose, Calif.



'40 CADILLAC Series 60-S 4-dr. black sed. Rebuilt V8 engine, r & h, all-leather interior. Very good cond.; orig. owner. Asking \$500. D. R. McNeal, 3020 Miramar Rd., Sacramento 21, Calif.

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'33 AUBURN 12 sed. Body very poor, mechanically not bad. Good for restoration or parts; 3 extra doors & extra parts. Located in Allentown, Pa. \$175 or best offer. J. Garman, 736 Chestnut St., Emmaus, Pa.

PACKARD PARTS—Dismantling '30 & '31 Standard Eight. All parts, including 10 19-inch wheels & tires, for sale. All letters answered. A. M. Mair, 210 S. Bloomington St., Streator, Ill.

'55 MERCEDES-BENZ 300 sed. in mint cond. Private car, priced very reasonable. John Nuding, 211 Ontario St., Toledo 2, Ohio. Phone CHerry 1-3151.

'37 HORCH 5-pass. conv. Used in Germany for Embassy staff car during World War II. Absolutely flawless, all orig. & in exc. cond.; very low mileage. Documents included with car. Priced reasonably. John Nuding, 211 Ontario St., Toledo 2, Ohio. Phone CHerry 1-3151.

'35 CHRYSLER Airflow 8. Mechanically near perfect.—rebuild engine, generator, brakes. Body perfect, new paint, 7.00x16 tires, safety tubes, o.d. 85,000 mi.; interior poor. \$500. B. Howard, 843 Rosser Dr., Prescott, Ariz.

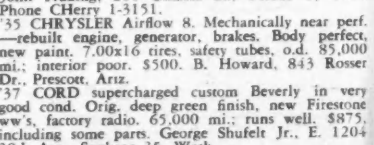
'37 CORD supercharged custom Beverly in very good cond. Orig. deep green finish, new Firestone w.w.s. factory radio. 65,000 mi.; runs well. \$875, including some parts. George Shufelt Jr., E. 1204 38th Ave., Spokane 35, Wash.

'34 PLYMOUTH rumblesat cpe. Exc. running cond., good tires & uph.; needs minor repairs. Owner, old maid. Best offer. C. B. Strayhorn, 1311 E. Morehead St., Charlotte 3, N.C. Phone ED 4-6584.

'39 PACKARD V-12 Victoria classic conv. with sidemounts. Mint cond.—32 coats of hand-rubbed lacquer; trophy winner. Engine perf. \$1200 or best offer. Paul Johnson, 810 West St., Elyria, Ohio. Phone FA 2-0032.

'31 MODEL A rdstr. in exc. restorable cond. Send \$26 for picture & make offer. Dennis Westerlin, 1125 Tilden, Holdrege, Neb.

'35 AUBURN conv. sed. New top, 4 new w.w.s.; exc. chrome, paint & interior; r & h. Dual ratio;



good mechanical cond. \$1295 firm. Frank Adams, Box 141, So. Hadley, Mass.

'28 REO "Wolverine"—special 2-pass. body, 6-cyl. Leather uph., exc. cond., maroon lacquer. E. W. Frazer, 38 Quimby Pl., West Orange, N.J.

'35 ADLER rdstr. 1 1/2-liter, front drive, torsion rear, double transverse front. Alum. body, new leather interior; 5 Dunlops. Exc. cond. \$750; pix 25c. C. J. Mulhern, 3 Marshall St., Irvington, N.J.

'41 LINCOLN CONTINENTAL conv., with Chrysler V8 engine, r & h, o.d., metallic maroon lacquer, white vinyl top, orig. uph., new premium w.w.s. 20 mpg. Beautiful solid car. Bob Flaten, 1112 S. Rhett Ave., North Charleston, S.C. Phone SH 7-3400.

'34 LINCOLN 4-dr. sed. Everything orig. except new tires. Just like new inside & out; 20,000 mi. Previous owner former governor of North Dakota. \$2700. Kenneth L. Scuttsbeck, Wadena, Minn.

'40 HUPMOBILE Skylark sed. (Cord body). Partly



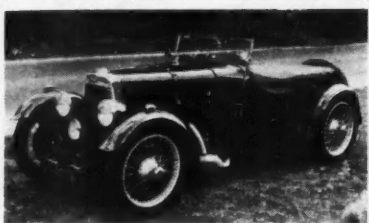
restored; partly disassembled. Good body & engine. Extra engine, access, wheels, rear end & trunk lid. \$275. Dempsey Raley Jr., 308 Grape St., Vacaville, Calif.

'30 FORD cabriolet. Complete professional restoration. \$900 firm; previously offered at \$1000. Colored 8 x 8 print #1. A. Kenison, 161 Waverley St., Belmont 79, Mass. Phone IVanhoe 4-2322.

'30 PACKARD 8 phaeton in running cond. Rear windshield, trunk, 6 chrome discs & tires. Good top, all side curtains. Little rust; needs paint. \$1000. complete. H. D. Montgomery, 2970 Ranch House Rd., West Palm Beach, Fla.

'32 PACKARD 8 4-dr. sed. Complete & orig.—spoke wire wheels, ride control, brake selector, self-lubricator, swing-out windows. Orig. manual & tool kit. Can be driven anywhere. Hy Ramis, 6342 N. Troy, Chicago 45. Phone HOLLYcourt 5-4777.

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'46 LINCOLN CONTINENTAL htdp. 303-cu.-in. Olds engine, o.d., ww's. New black paint, shocks & carpet. Deliver up to 600 mi. \$2000. Robert E. Whitney, 718 W. Lenawee, Lansing, Mich. Phone IV 7-5774.

'25 LINCOLN 7-pass. sed. with Brunn body. Needs timing chain, otherwise in good shape. Make offer. G. Daggett, 451 Hanover Ave., Oakland, Calif.

'39 LINCOLN ZEPHYR cpe. Exc. body; engine shot. Make offer. G. Daggett, 451 Hanover Ave., Oakland, Calif.

'37 LINCOLN ZEPHYR 12-cyl. cpe. Needs minor repairs & paint job; some work already done on it. Make offer. Daniel Rinaldi, 2018 N. Main Ave., Scranton, Pa. Phone Diamond 2-0940.

CORD 810 conv. phaeton. Stock except bumpers; 1100 mi. on rebuilt supercharged engine. Spare engine, chassis, running gear included. No reasonable offer refused. H. J. Garcia, 1347 Texas, Grand Junction, Colo. Phone CJHapel 2-0134.

'41 CADILLAC conv. 4-dr. sed. Orig. except paint & top; very clean. \$800. L. Austin, RR #3, Bloomington, Ill.

'32 PIERCE-ARROW V-12 4-dr. sed. Velvety-smooth engine—no trouble in modern-day traffic.



Entire car, including chrome & paint, in near-new cond., equipped with ride control & free-wheeling. \$1295. H. Reeves Jr., 1300 W. Concord, Orlando, Fla. Phone GA 3-1209.

'34 PACKARD Straight 8 cpe. with rumbleseat, wire wheels. Partly restored; good running cond. Good rubber & spares. Licensed. Q-tag. \$395. C. H. Beal, 9781 S.W. 60 Court, Miami, Fla.

'34 CADILLAC short-coupled brougham. Immac., no rust, orig. paint; one owner, always garaged. Orig. radio, ride control, 6 good tires. Can be driven where \$1500 or best offer. Jene L. Reinhart, c/o Chuck's Mobil Service, 2415 Hilyard St., Eugene, Ore. Phone DI 5-9455.

'53 BUICK Skylark conv. in showroom cond. All power, wire wheels, new top. White lacquer finish, red & white leather interior, Continental kit. \$1900. Jack Windt, 5730 15th Ave. South, St. Petersburg, Fla. Phone DIckens 1-8654.

'32 CADILLAC V-12 limousine in exc. cond. 6 good tires; drive anywhere. \$1000 firm. Want Franklin V-12 transmission. P. S. Corson, Rt. 3, Smyrna, Ga.

'27 PIERCE-ARROW 7-pass. sed. Complete & very solid, good tires; easily restored. First \$600 takes. W. Bittner, 504 W. Washington, Bloomington, Ill.

'24 HUMPHREY 4-cyl. rare 3-door model with rear trunk. Stored many yrs. Well-kept; low mileage. Priced right at \$450. W. Bittner, 504 W. Washington, Bloomington, Ill.

'37 CORD Westchester trunk sed. Orig. front-wheel drive with mechanical shift. Engine & drive rebuilt in '56. Lacquer finish, chrome uph. Drive anywhere. \$1000 firm. C. W. Sissman, Box 1450, Casper, Wyo.

'34 FRANKLIN Olympic sed., with steel-covered sidemounts. Exc. mechanically, new battery. Fair tires, uph., & paint. Last Franklin made—has lots of zip. \$300. Frank B. Ober, Jr., Monkton, Md. Phone JArresville 4-421.

'17 FRANKLIN sed. Completely restored—new uph., tires, paint; engine o.hauled. Complete in every way; consistent trophy winner. Jack Johnson, 750 N. Swords Ave., West Peoria, Ill. Phone 4-1350.

'47 LINCOLN CONTINENTAL V-12 cpe. R & h. ww's. Orig. thruout; good cond. \$1000 or best offer. Edward A. Hall, P. O. Box 252, Venice, Fla.

'41 PACKARD 160 7-pass. limousine. R & h, o.d. Exc. thruout, runs perfect; 47,000 mi. Drive anywhere. \$600; send 10c for pix. Edward Pohlmann, 1356 Estes, Chicago 26.

'36 PACKARD 8 conv. cpe. 7 tires (sidemounts), uph., engine, paint, top—all good; 85,000 mi. Drive anywhere. Pix & info on request. Asking \$650. Wayne Hull, 219 Kamps St., Kimberly, Wis.

'38 MERCEDES-BENZ 540-K conv. cpe. A magnificent classic in perf. cond. Full rear seat, black finish, tan top, black leather, new tires. Reasonably priced at \$2900. E. B. Dunn, Soldiers Field Post Office, Boston 63, Mass. Phone KI 7-8633.

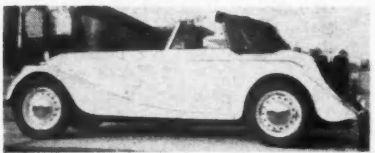
'31 MODEL A spt. cpe., with rumbleseat, soft top. 300 mi. on completely rebuilt engine. New lacquer job, loaded with chrome, good tires. Car is like new. \$995. Bob Hacker Jr., Rossview, Ind. Phone 9-2301.

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'26 MODEL T 2-dr. sed. Body, engine, tires very good; in storage since '54. Can be driven anywhere. \$250, or will trade, Leonard Knight, 7 Nirvana Ave., Great Neck, N.Y.

'55 ORGAN drophead cpe. Rare body style—the modern classic sports car. Ivory paint, red leather,



all extras. \$1945 or trade for VW or Karmann-Ghia. Charles Pasco, 6019 44th N.E., Seattle 15, Wash.

'48 LINCOLN CONTINENTAL htdp. Like new, orig. thruout; engine recently rebuilt. R & h, o.d., ww's. Owner going to Alaska. \$1000 or trade for Ford or Chevy station wagon. Randall L. Clark, M.D., 14-C Mannheim & Schuyler Sts., Philadelphia, Pa.

'39 PACKARD 12 Brunn landaulet. Mint thruout; 21,000 mi. Will trade. H. P. Davock, 2716 Barcelona Dr., Fort Lauderdale, Fla.

'30 Chrysler Model 66 4-dr. sed. Exc. general cond.—new tires, refinished wooden spoke wheels. \$350, or trade for good '47, '48 Buick convertible.

JAGUAR XK transmission—new. \$100 or trade for Fiberglass hardtop for '53 XK-120. J. M. Wagner, MR #10 S. Shore Dr., Dover, Del.

'38 PACKARD Super 8 conv. cpe., with sidemounts, rumbleseat. New tires, top, paint. \$1200 or will trade for '14 Ford touring. Gene Cofer, Tucker, Ga.

'58 VOLKSWAGEN Karmann-Ghia. Exc. cond., 3000 mi., guaranteed. Two-tone cognac & cream. \$2625; will trade for older model car. D. E. Salmeier, 408 W. Tierra Blanca, Clovis, N.M. Phone POrter 3-7554.

'48 LINCOLN CONTINENTAL htdp. cpe. Merc V8 engine, sparkling 13-coat black lacquer finish, nylon cord ww's, all-leather interior. New o.d., clutch with spec. pressure plate. \$1950 or trade. Art Larson, 214 32nd St., Newport Beach, Calif. Phone ORiole 3-0875 or HYatt 4-7744.

WANTED

PARTS FOR '34 FORD: 4 hubcaps, 2 "cow" lights, luggage rack, dash radio & literature. Hubcaps & lights must be in good cond. Bob Berwager, 953 Carlisle St., Hanover, Pa.

CADILLAC V-16 body or complete car—'30, '31, '32. Can be rough or mint. Prefer cpe. or rdstr., but will consider all. \$20 finder's fee. James L. Larson, 5001 Holton Ave., Fort Wayne, Ind.

'36 PACKARD Super 8 14th Series (cpe. rdstr.). Timing chain, sprockets, gaskets, etc. Please send your listing of parts. Richard A. Fee, 208 Pioneer Pike, Eugene, Ore.

CASH for pre-war auto catalogs, show annuals, radiator emblems—any make. Highest prices for Rolls-Royce, Cunningham, Cadillac, Imperial, Brewster, Isotta-Fraschini, Peerless—big-car literature. Lewis A. Mayer, Munith, Mich.

CLASSIC CAR—phaeton or rdstr. preferred. Leads also appreciated. Marland Adelson, Stensburg, Neb.

OLD AUTOMOBILE CATALOGS, brochures, folders, Motor Annuals, monthlies, automobile trade journals, name-plates, montometers, etc. Top prices paid for material in good cond. Sheldon J. Lewis, 61-23 213th St., Bayside, Long Island, N.Y.

SOFT TOP for '36 Thunderbird. Prefer black. Can use a complete set of bows, fittings, etc. that I can re-cover. W. T. Wooden, 2981 Larra Rd., Rochester 12, N.Y.

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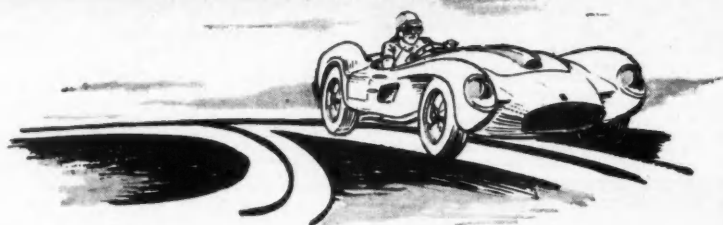
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ESCAPE ROAD

Edited by
Erwin Rosen



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ney! Giddap, Johnny! Giddap, Tom!"

STRANGER: "How many names does
that mule have?"

FARMER: "Only one. His name is
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strength, so I put blinders on him,
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NAVIGATOR: We're lost—but we're making good time!



"I'm afraid you've made a mistake,
officer—my name's not Fangio."



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...it's still sparkling after 6 months"

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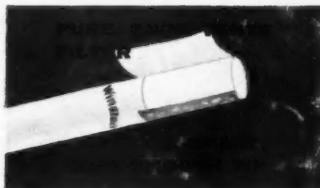


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